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THE ROYAL NAVAL RESERVE.

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Monday, 29th June, 1903.

Admiral Sir NATHANIEL BOWDEN-SMITH, K.C.B., in the Chair.

SOME fourteen years ago¹ I had the honour of reading a paper in the theatre of this Institution upon the subject of "The Royal Naval Reserve."

Six years later,² I followed up that paper by another bearing the same name, and devoted to the same question; and to-day I wish to place before you a short account of some of the steps which have been taken during the subsequent interval in order to further increase the numbers and to improve the organisation and general efficiency of the force; to deal in a generally appreciative manner with some of the matters and propositions contained in the Report of the Departmental Committee, recently presided over by Sir Edward Grey, and known by the short title of "The Naval Reserves Committee"; to put forward a few personal suggestions; and, lastly, to consider certain important figures and facts relative to a portion of the existing recruiting areas for our Naval Reserves; and, in carrying out this programme, it is my desire to avoid, as far as may be possible, travelling over ground which I have already traversed in public upon previous occasions.

The following introductory table shows the strength of the Active List of Officers of the Royal Naval Reserve on the 31st December, in the years 1888, 1894, and 1902:—

¹ January 25th, 1889 (*R.U.S.I. JOURNAL*, No. 147, Vol. XXXIII.).

² May 10th, 1895 (*R.U.S.I. JOURNAL*, No. 210, Vol. XXXIX.).

Rank.	1888.	1894.	1902.
Lieutenants	47	304	504
Sub-Lieutenants	84	340	417
Acting Sub-Lieutenants	35	35	107
Midshipmen	137	378	474
Senior Engineers ¹	—	38	73
Engineers	14	117	193
Assistant Engineers	4	41	132
	321	1,253	1,900

As under the regulations in force at the end of last year the authorised number for the executive branch was 1,500, and for the engineering branch 400, it will be seen that the lists were then full up; while it may be remarked that there were, at the same time, between 300 and 400 applicants for commissions or appointments. These facts should afford strong testimony, if such were needed, to the present popularity among the executive and engineer officers of the mercantile marine of this very important auxiliary section of our naval defences.

The authorised numbers for 1903-04 are 1,550 executive officers and 400 engineer officers, being an increase of 50 of the former class.

In addition to the officers already enumerated, there were on 31st December, 1902, 7 staff-paymasters, 55 paymasters, and 69 assistant paymasters on the Active List, who act as registrars and assistant-registrars of the Royal Naval Reserve. Those gentlemen formerly held honorary commissions only, but by an Order in Council of May, 1900, they were placed on the Active List; a proceeding which may be looked upon as an act of simple justice when we consider that, although for various reasons they would not be available for service afloat, they perform most important duties in connection with the force in time of peace, and in the event of war would be mainly responsible for getting the men together, the coast-line of the United Kingdom having been mapped out into districts in order to facilitate that course, and the districts so formed having been placed under their charge.

On the same date there were also 39 commanders, 85 lieutenants, 19 sub-lieutenants, and 3 engineer officers (some members of the different ranks having undergone naval training) on the Retired List, but, owing to age, infirmity, and other causes, a certain proportion of those on that list would be unable to serve if called upon.

In February of this year, when the First Lord of the Admiralty presented his annual statement to Parliament, 276 executive officers had undergone twelve months' training in the Fleet (some of them for more than double that period) and were in receipt of annual retaining fees. At the same time, 68 executive officers were serving in the Fleet, and 30 others were going through short courses in the gunnery and torpedo schools.

It should be mentioned that no executive officer is now appointed for twelve months' naval training unless he has been through short courses of gunnery and torpedo, and has also been recommended by the captains of the gunnery and torpedo schools, on completion of the respective courses, as a desirable officer to undergo such training.

¹ The rank of Senior Engineer was instituted in 1891.

It is to be noted that officers of the Royal Naval Reserve who have undergone twelve months' naval training, and who volunteer for further service in the Fleet, say for one, two, or three years, are eligible for employment, and are employed, in lieu of officers of corresponding rank in the Royal Navy, and one lieutenant has so served for no less a period than five years.

Since October, 1897, the engineer officers have been allowed to undergo a three months' course of instruction, in one of H.M. dockyards, in the particular duties they would have to perform when called out for service, and in February of this year 106 of them had completed, or were undergoing, this training.

The maximum age for officers upon first appointment to the Royal Naval Reserve (other than as midshipman or assistant engineer) was lowered in 1896, and the age for compulsory retirement was also reduced in the case of the executive branch, thus bringing the practice of this section of the auxiliary force into harmony with the practice of the Royal Navy. However, this latter necessary reform was arranged in an extremely equitable manner, only those officers who joined after 8th February, 1896, or who came on to the different lists by promotion after that date, being affected by the new departure.

During 1895, and up to 1898, the Royal Naval Reserve supplied between 130 and 140 officers to a Supplementary List of Lieutenants and Sub-Lieutenants of the Royal Navy, instituted in the former year, as a temporary measure, in consequence of the then great dearth of officers of those ranks.

The plan of creating such a list, notwithstanding the outburst of disapproval with which its introduction was greeted in some quarters, appears to have successfully answered the purpose for which it was intended; and it is gratifying to be able to record that two of the supplementary lieutenants have been specially promoted to the rank of commander in the Royal Navy, for distinguished war services rendered by them respectively in Samoa and South Africa.

The Supplementary List having practically fulfilled its object, namely, the tiding over of a crisis, has now been definitely closed, and will gradually become extinct as those on it die out or are pensioned off.

The history of the Royal Naval Reserve during the past eight years has certainly, at any rate as regards the officers, been one of continued progress and activity; but we live in high-pressure days, and further and increased effort is necessary if it is to be brought up to that high standard of excellence which we all so earnestly desire to see attained.

Recently, as we are all aware, the Lords of the Admiralty have sanctioned a new scheme for the training of our future naval officers; a scheme under which the distinctive entry of executive cadets and engineer students is abolished and a common system of entry adopted, to be followed by an identical course of study until a certain age is reached, when the parting of the ways is to take place—at any rate for a time. Now it is almost needless for me to say that it is not my intention to enter into any discussion of the merits or demerits of that scheme; indeed, it would be an act of presumption on my part to express an opinion in public, whether favourable or unfavourable, relative to a question regarding which some of our highest naval experts are diametrically opposed to one another.

But it has occurred to me that, if the general system of the training of our naval officers of the future (and deck officers only are now

referred to) is to be conducted upon entirely new lines, then the training of Royal Naval Reserve officers, if they are to hold their own and still further develop their value, must also be modified, or perhaps I should rather say be conducted, so far as may be possible, in a similar direction.

At the present moment, boys who have passed through a two-years' course of instruction on board either the "Worcester" or the "Conway," and have been nominated by the respective committees of those training-ships, are eligible for appointment as midshipmen in the Royal Naval Reserve; and midshipmen or apprentices in the merchant service, who have not been so nominated, are also considered for appointment in the same grade, provided they have served one year at sea on board a first-class British ship.

Now, it is an indisputable fact that, although boys may have had the good fortune to pass through those excellent training-ships for cadets, the "Worcester" or the "Conway"—and great numbers do not enjoy that advantage—and so have been taught navigation and the rudiments of their future profession, there is hardly anything in existence that can be termed a satisfactory system for their subsequent sea-training as officers of the mercantile marine.

It is true that in the palmy days of such once well-known firms as Green's, Smith's, and Wigram's, each ship belonging to their lines carried a number (sometimes a dozen) of so-called midshipmen, who were in every way treated as young gentlemen, and were at the same time carefully taught the important duties which they in after years would be required to perform.

However, it must be borne in mind that even then that particular description of training was the exception and not the rule in our merchant navy; and with the disappearance of the old-fashioned ships in question, organised sea-training for young officers practically came to an end.

As a revival of the practice mentioned above, Lord Brassey, who has always manifested great interest in this matter of the sea-training of young officers, in conjunction with Messrs. Devitt and Moore, of London, a few years ago inaugurated a plan for training young gentlemen on board the sailing-ships "Hesperus" and "Harbinger," engaged in the Australian trade; and this scheme, which proved to be very successful, is now carried on in the "Illawarra" and "Macquarie," sailing vessels of 1,900 tons register. Each ship carries forty midshipmen, and is provided with a naval instructor; the midshipmen are taught all details of seamanship, and their education, principally in mathematical subjects, is conducted with as much regularity as conditions of weather will permit.

By way of extending this scheme, his lordship strongly urges that the Admiralty should grant premiums to shipowners who are prepared to provide proper facilities for the sea-training and education of the midshipmen of the Royal Naval Reserve. While cordially endorsing the principle of this proposal, which is that the Admiralty should actively interest itself in the education and sea-training of such young officers, I would somewhat vary the plan.

Looking at the fact that the training of young naval officers in masted vessels has, after much discussion and consideration, been abandoned, there seems to be no great reason extant why that mode of training should be continued in the case of those young merchant sailors who are ultimately destined to officer and command our large

mercantile steamers, and also to fill the commissioned ranks of the Royal Naval Reserve.

Commander Wilson-Barker, R.N.R., Captain-Superintendent of the "Worcester," has for several years past advocated that when boys leave his care they should at once go to sea in steamers, instead of putting in any preliminary time in sailing vessels, and, having looked at the matter from various points of view, I have come to the conclusion that he is right. While making this admission, I should be sorry if it were inferred that I under-value sailing-ship training and seamanship. On the contrary, I cannot help thinking that the man who has had early experience in that type of vessel, will be more likely to develop a greater amount of ready resource under the stress of some conditions of abnormal circumstances than will the man who has passed all his time in a steamer. Yet the question presents itself as to whether it is worth while for a youngster to spend a number of years, at an age when the brain is in the most receptive condition, in acquiring a particular description of knowledge which may never be called into requisition, to the exclusion of something else which may prove of importance in every-day life. In other words, is the game worth the candle? Moreover, as has already been pointed out, ships in the mercantile marine like the "Illawarra" and "Macquarie" are wholly exceptional, and it is much to be feared that the majority of our sailing vessels are not, in many respects, desirable schools for the training of young officers.

Therefore, following up, but at the same time varying, Lord Brassey's idea that the Admiralty should take part in the early training and education of young officers of the Royal Naval Reserve, it would seem to be important in the first instance to ascertain what number of midshipmen it would be desirable to enrol each year.

Then it might be possible for the naval authorities to make arrangements with the managers of some of the principal steam-ship companies to carry the midshipmen on certain of their vessels.

These youngsters would be carefully taught practical navigation, the general duties of an officer of a first-class steam-ship, electricity, and practical engineering, a portion of their time being passed in the engine-room and boiler-room—the character of their instruction, their duties, and their position on board being clearly defined.

The navigating officer would be the instructor in the first subject, the electrician would give lessons in electricity, and one of the engineers would superintend the engineering instruction; but it would be absolutely indispensable for the success of the plan that the instructors should receive extra pay for their services, and not have only additional work thrust upon them.

Under such a method certain uniformity of training would be insured at the outset, and this in itself must prove advantageous to the Reserve; moreover, the steamship companies would also derive direct advantage from the scheme, irrespective of any pecuniary profit they might reap from premiums received and services rendered, as they would have a number of suitable young officers, trained under their own auspices, to select from for their own purposes.

Of course, during their sea-training arrangements would have to be made to enable the midshipmen to attend at the drill-ships for their annual instruction in gunnery; and, if entered at the age of sixteen, a three years' term (or only two years in the case of "Worcester" or "Conway" cadets possessed of the special certificates of those ships) in

a steamer would be sufficient for all practical purposes, that period being supplemented by a year in the grade of acting sub-lieutenant, while passing through the Royal Naval College, the gunnery and torpedo schools, etc.

The Board of Trade regulations might be amended to meet the special cases under this scheme, and those officers who successfully passed the college and other examinations would be granted certificates of competency for the grade of second mate (or a higher grade) without being subjected to further tests.

It almost goes without saying that before any certificate higher than that of second mate (obtained in this way) could be used in the mercantile marine in accordance with what may be described as its face value, a prescribed period of independent watch-keeping would be requisite.

While putting forward this rough outline of a modern training scheme, I wish to guard against the supposition that those who might render themselves thoroughly efficient by some other process should be penalised (although the one year in the rank of acting sub-lieutenant would in any case be highly desirable), or that direct entry into the Royal Naval Reserve, in special cases, in the rank of sub-lieutenant should cease.

With regard to the pecuniary side of the question, the sea-training premiums, as is now the case, would have to be paid by the parents or guardians of the boys (although the Admiralty might well assume a portion of this burden), but the cost of the year's training in the rank of acting sub-lieutenant, while going through the Royal Naval College and the gunnery and torpedo schools, would naturally be met out of the Navy Estimates.

At the same time, should the Admiralty advance a portion of the premiums, in order to properly safeguard the public purse it would be requisite for the midshipmen, their parents, or their guardians to give an undertaking to refund any sum—or any portion of such sum—that might have been advanced, in the event of the midshipmen leaving the sea-service or the Royal Naval Reserve before the expiration of a certain number of years.

By adopting a system similar, or similar in principle, to that set forth, an efficient body of executive officers, trained under almost identical conditions, would be obtained for the Royal Naval Reserve at what may be considered a comparatively trifling expense to the State.

But even if it were determined to institute some such plan, several years must necessarily elapse before the benefits to be derived from it could be largely felt; accordingly, a point for consideration is how best to improve the material already available.

In saying this, I hope that I shall not be accused of in any way attempting to minimise the capabilities of my brother officers; but knowledge is power, and higher and technical education is now universally recognised as being of the utmost importance in most professions and trades; and, that being the case, it is quite certain that if Royal Naval Reserve Officers are to be utilised to the full extent of what should be claimed as their value, the naval authorities have little option left with regard to aiding them to overcome the educational difficulties with which they are beset.

However good their early training may have been, they of necessity have to go to sea at an early age, and, when there, too often find but little opportunity, and possibly receive even less encouragement, to keep up or increase their useful stock of mathematical knowledge.

Again, later on, when some of them would willingly undergo a course of study, they are debarred from doing so, mainly owing to their inability to devote time to such a purpose without pecuniary remuneration.

Accordingly, I would once more urge that officers of the Royal Naval Reserve, who so desire, should be appointed to the Royal Naval College, Greenwich, for a course of study, in precisely the same way that they are now appointed for short courses of gunnery and torpedo to the schools at Portsmouth or Devonport. There are difficulties in the way of this being done, but they do not appear to be insuperable.

In the same way that the Admiralty, for many years before the present idea that all naval officers should be skilled engineers was mooted, thought some knowledge of steam advisable for the executive branch, the Board of Trade, for many years past, has been desirous of cultivating information among masters and mates in the merchant service with regard to the working and management of the marine steam engine, and, with that object in view, introduced a voluntary examination for the purpose of giving such officers who hold certificates of competency an opportunity of demonstrating their practical acquaintance with this very important subject; the successful candidates having the words "Passed in Steam" endorsed on their certificates.

The examination is for the most part *viva voce*, and extends to a general knowledge of the practical use and working of the steam engine, and of the various valves, fittings, and pieces of machinery connected with it; and of the way in which electric lighting is carried out on board ship. Intricate theoretical questions on calculations of horse-power, or areas of cylinders or valves, or any of the more difficult questions relating to steam engines and boilers, are not asked; but the examination is, in fact, confined to the duties which the master of a steam vessel might be called upon to perform in the case of the death, incapacity, or delinquency of the engineer; and practical knowledge, as distinguished from theories and abstruse calculations, is the test of the candidate's fitness to have his certificate endorsed in the manner already described.

Unfortunately, very few masters and mates avail themselves of the opportunity afforded them in this direction by the Board of Trade, and during the five years 1898-1902 the average number of endorsements was only 3·2 per annum.

This is the more remarkable when we consider that masters are constantly complaining that they are gradually being pushed to the wall by marine engineers, particularly in connection with such appointments as that of marine superintendent of shipping companies. But what else can they expect if they do not display sufficient energy to qualify themselves in accordance with the altered and ever-changing condition of things?

However, in view of the new departure taken in connection with that subject in the Royal Navy, it is to be hoped that Royal Naval Reserve officers will now awaken from their lethargy with respect to engineering; and, from personal experience, I can vouch that the information acquired when preparing to pass the Board of Trade examination in steam is afterwards frequently of much value to the master of a steam vessel.

Various minor alterations have been made in the regulations relating to officers of the Royal Naval Reserve from time to time, but it is hardly necessary to weary you by entering into minute details.

Year by year the question of providing a sufficient *personnel* for the Fleet in time of war has been becoming more and more acute, and latterly it has been particularly accentuated by the feeling that our permanent and continuous-service *personnel* has almost reached the maximum limit to which it should be brought during a period of peace.

On 15th January, 1902, the Lords of the Admiralty appointed a Committee to enquire and report how far, and in what way, the manning of the Navy might be supplied, and the active ratings supplemented by Naval Reserves.

Sir Edward Grey, Bart., M.P., presided over this Committee, and among its members was Mr. John Clark Hall, Registrar-General of Shipping and Seamen, who ever manifested the utmost interest in the welfare of the Royal Naval Reserve, and had done much to improve the civil portion of its organisation. Unfortunately, his colleagues were not destined to long enjoy the advantage of his counsel, as death removed him early in the inquiry, to their expressed sorrow, and to the intense regret of many of us who, knowing and appreciating his sterling worth, claimed him as a personal friend.

Having sat for a lengthy period, and having collected a mass of evidence (including some valuable tables and other information relating to the Royal Naval Reserve, prepared by Mr. C. H. Jones, Assistant Registrar-General of Shipping and Seamen, whose services were suitably acknowledged in the chairman's covering letter), the Committee presented its Report on January 20th, 1903.

This Report deals with a limited description of Short Service, the Royal Fleet Reserve, the Royal Naval Reserve, Colonial Naval Reserves,¹ Naval and Marine Volunteers, etc., but the only part of it with which we need concern ourselves to-day is that which relates to the Royal Naval Reserve.

Taking the officers of this body first, the following is the substance of the more important suggestions and recommendations:—

1. That the number of officers should be increased.
2. That officers serving, or having served, in mercantile companies² should not be accepted without a special recommendation of their fitness for the Royal Naval Reserve from the marine-superintendent or superintending-engineer of the company; and that where the officer comes from a company having no such officials, a similar recommendation from the owners should be required.
3. That the old system should be revived of giving honorary commissions to marine-superintendents and superintending-engineers who may not already hold commissions as Royal Naval Reserve officers, solely as a recognition of their having forwarded the interests of the Reserve.
4. That all Naval Reserve officers entered in the future should be considered "Probationary" until they have undergone the prescribed period of training in the Fleet, and that such probationary

¹ According to the First Lord's statement, the Newfoundland branch of the Royal Naval Reserve is fairly started, and then (February, 1903) numbered some 180 men.

² No others are eligible.

officers should not be counted in the numbers authorised by Order in Council.¹

5. That a new rank of Commander, Royal Naval Reserve, should be established for officers who have a certain seniority in the Reserve and are in command of the larger classes of mercantile steam-ships. These commanders could be employed during war upon the same duties, and under the same conditions, as staff-commanders.

6. That a lieutenant of the Royal Naval Reserve should be appointed as executive officer to the drill-ships in London, Liverpool, and Bristol, where the majority of Royal Naval Reserve officers perform their drills.

7. That in considering promotion to the rank of lieutenant, weight should be given to the recommendations of captains of His Majesty's ships in which officers have served for a year, and that such recommendations should partly dispense with the mercantile marine qualifications now enforced; and that under no circumstances should the effect of good service in the Navy be to retard promotion in the Royal Naval Reserve, as it sometimes does under the existing regulations.

8. That all officers not fitted for the duties they would be required to perform during war should be removed from the list.

9. That proposals for improving the training of the officers of the Royal Naval Reserve should be considered by the Admiralty.

10. That the armament of drill-ships and batteries should be modernised as soon as practicable.

11. That any substitution of warrant engineer officers for commissioned officers in the Navy, should affect the numbers of Royal Naval Reserve engineer officers proportionately, and that these numbers should be so arranged as to be in accordance with the Admiralty scheme of mobilisation.

12. That the active rank of Chief Engineer, Royal Naval Reserve, should be instituted, and conferred, at the discretion of the Admiralty, upon a limited number of Royal Naval Reserve engineers who are in charge of the engines of the more important ocean passenger steamers; the intention being to employ them in that rank in those ships if taken up by the Admiralty for service in war.

13. That the age for compulsory retirement of Royal Naval Reserve engineers and assistant-engineers should be reduced from 55 to 45.

14. That Royal Naval Reserve engineer officers should be made eligible to retire with higher rank after good service, on a system similar to that for executive officers.

15. That the names of all engineer officers not fitted for the duties they would be called upon to perform in time of war should be removed from the list.

16. That while the three months' period of instruction in the dockyards is very valuable to Royal Naval Reserve engineers, and is

¹ The Admiralty have now (September, 1903) decided that midshipmen must in future serve two years at sea, undergo twenty-eight days' drill, and be recommended by the officer commanding one of the drill-ships, before their first appointments can be confirmed.

Sub-lieutenants will have to obtain a test certificate, and be recommended by the officer commanding one of the drill-ships, before their first appointments can be confirmed.

much appreciated by them, the course appears to need more organisation, and a special instructing officer; and that Royal Naval Reserve engineers should be selected for this course on the same principle that executive officers are selected for the gunnery course. Also that reports upon officers who undergo dockyard training should state whether they are recommended for retention in the Reserve and are fit for service in the Fleet.

17. That a new class of Royal Naval Reserve engineer warrant officers should be created, the members to hold a position similar to that of artificer engineers in the regular service, but to have a title more likely to be acceptable to them, and more clearly indicative of their special rank. The Committee are of opinion that the watch-keeping duties for which Reserve engineers are chiefly needed, could be very well performed by warrant officers of the class which they have in view; and that there should be 370 of them entered in this rank. They recommend that engineers under 40 years of age holding the Board of Trade first-class engineer's certificate, whether still serving afloat or employed in shipbuilding or other yards where their efficiency as engineers would be maintained, should be eligible for direct entry in this rank, but that eventually all vacancies in the numbers should be filled by advancing duly qualified Naval Reserve engine-room artificers. Also, that these warrant officers should receive an annual retaining fee of £15, so long as they remain on the list and are fit for service at sea; and that when at drill, or called out for service in case of emergency, they should, in addition to their retainer, receive pay and allowances on the same scale as engineer warrant officers in the Royal Navy, with whom they should be classified as regards widows' pensions, compensation for injuries, compassionate allowances, etc.; and that after twenty years' service in the Naval Reserve they should, at the age of 60, be granted a life-pension of £15 a year, or be given the option of receiving payment of its ready-money value at the age of 55. The Committee add a recommendation that the warrant engineers should be given some training in His Majesty's dockyards, or in the Fleet; and that the duration of such training should be at least a fortnight in each year, or one month in two years, or even a longer period.

18. That a class of 1,500 engine-room artificers should be formed, for which engineers having sea-going experience and a Board of Trade certificate should be eligible without examination, and engineers not holding such a certificate should be eligible on passing the ordinary examination for engine-room artificer, fourth class. The terms proposed are as follows:—

- a. Age for entry not to exceed 30 years.
- b. Enrolment to be for 5 years, with optional re-enrolment from time to time to complete the age of 50.
- c. A retainer of £10 a year up to the age of 50, to be followed by a pension of £12 per annum at the age of 60, or its ready-money value to be given at the age of 55, provided the engine-room artificer has served for twenty years in the force.
- d. Pay, if called out for service on an emergency, or whilst at drill, to be on the same scale as for engine-room artificers in the Royal Navy; as also widows' pensions, compassionate allowances, compensation for injuries, etc.
- e. To be eligible for promotion to warrant rank.

With regard to sea-going experience, it is suggested that this section should be composed, if possible, entirely of men with Board of Trade certificates or sea-going experience, and in their case the same general recommendations which have been made in the case of engineer warrant officers would apply. If, however, in default of these, it should be found necessary to take any men who have not had sea-going experience, they should be required to undergo the same period of three months' training at sea that would be required from a certain section of the firemen, and such men should not be enrolled until they have attained the age of 25. Also, the confirmed rating and retainer should not be given to such men until after the course at sea, and after passing a test of efficiency.

While many of the foregoing suggestions are admirable and do not call for any special comment, there are two or three of them which, in my opinion, are open to a considerable amount of criticism.

For instance, the suggestion that commissions should *only* be granted to candidates recommended by the marine superintendent or superintending engineer of the mercantile shipping company to which they may belong, is one to which grave objection can be taken; and in making this statement I do not wish to be misunderstood.

That special care should be exercised in the granting of commissions has been urged over and over again, and by no one more strongly than myself, and it is perfectly true that a certain number of undesirable appointments were made when hurriedly filling up the lists during a sort of panic which prevailed some years ago; but with few vacancies occurring, and many candidates to choose from, that reproach has long since become a thing of the past. Moreover, if this latter view were not correct, the adoption of the recommendation that all officers should be considered probationary for a time, would not fail to keep matters straight in the future. Under any circumstances, the proposal as it stands would inevitably open the door to a good deal of jobbery and favouritism. In fact, in conversation with the master of a mail steamer upon this point, a short time ago, he expressed the opinion that it would be the means of keeping some of the most desirable men, from a naval point of view, out of the Reserve.

That the highest testimonials should be required goes without saying, and that the candidates should be personally interviewed by the naval authorities is equally desirable; but that it should be within the power of one or two wholly irresponsible officials of private companies—irresponsible so far as the State is concerned—to block the approach to the Admiralty of possibly excellent candidates appears to be eminently unwise.

Again, it is a very common thing in the present day for the superintending engineer to be also the marine superintendent, and in such a case the recommendation of executive officers would be made by a man of a different profession, who would probably know little or nothing about either them or their qualifications. Moreover, it must not be forgotten that there are various types of marine superintendents and superintending engineers, and that while some of them might be trusted to exercise only a just and wise discretion, there are others who may not be in themselves fit and proper persons, through not possessing a right appreciation of what a naval officer should be, to recommend applicants for the honour of the King's commission.

At the same time, in cases where the superintendents of companies held, or had held, rank on the Active List, and so were fully conversant

with the requirements of the force, considerable weight should be attached to their representations.

The suggestion that honorary commissions should once more be given to marine superintendents and superintending engineers is closely allied to the one which I have just been criticising. Those commissions were formerly given with the idea that, through the influence exercised by their recipients, young mercantile marine officers would be induced to join the force, and the employment of Royal Naval Reserve seamen and stokers would be encouraged. However, I much doubt whether the latter object was in any way advanced, and the practice, which was much disliked by *bonâ fide* officers of the Reserve, happily was abolished in 1891, after careful consideration, at the instance of Sir George Tryon's Committee. At the present time, with large numbers of eligible candidates for commissions presenting themselves, no case seems to have been made out for any such reversal of policy as is now advocated, and I think it may be laid down, without fear of contradiction, that the less there is of an honorary character about the Royal Naval Reserve the better it will be alike for the State and that body. In fact, nothing can be more calculated to destroy the *esprit de corps* and deaden the zeal of enthusiastic and energetic young officers, than for them to behold "outsiders" given higher nominal rank than they themselves enjoy, and permitted to appear in a uniform the duties pertaining to which the wearers, through lack of the necessary training, are wholly unable to perform.

In speaking thus strongly, I am not attacking individuals, but am only expressing an opinion with respect to what I consider to be an unwise proposal.

With regard to the recommendation that the rank of commander on the active list should be instituted, and that in time of war such commanders should be employed in a similar manner to staff-commanders, I may mention that it is identical with one which I submitted to Sir George Tryon's Committee in 1891. However, the present proposal is somewhat marred by the attached rider that the bestowal of the rank should be confined to those in command of the larger classes of mercantile steam-ships. Surely the fitness, the energy, and the zeal of the man himself should alone be the test and qualification for this coveted promotion, and not mere tonnage!

The principle of the remarks upon this head is also applicable to the proposed new rank of chief engineer.

As an illustration of the detrimental manner in which a tonnage qualification may work, some years ago a very able officer, and one of our best-known men, was kept an unconscionable time in the rank of midshipman, and saw many less desirable men promoted over his head, because the telegraph steamer under his command happened to be less than the prescribed size.

Passing on to the next point, it will doubtless come as a surprise to many to learn that the Committee should have thought it necessary to recommend that, under no circumstances, should the effect of good service in the Navy be to retard promotion in the Royal Naval Reserve. At the first blush, this necessity seems to smack somewhat of comic opera; and most people will agree that good service in the Royal Navy, and good testimonials from the captains of His Majesty's ships, should be the most important factors in determining the question of promotion. However, it is but right to say that I have been given to understand,

and quite believe, that only in exceptional instances have the existing regulations worked unfairly.

The next table shows the strength of the men's roll on the 31st December, in the years 1888, 1894, and 1902:—

Description.	1888.	1894.	1902.
"Qualified Seaman" Class	—	—	4,298
First Class (old system)	9,435	10,770	6,472
"Seaman" Class	—	—	5,572
Second Class (old system)	8,969	10,674	4,273
Third Class	312	250	15
Stokers or Firemen (old system)	439	296	—
Stokers or Firemen (new system)	—	1,283	4,033
Total	19,155	23,273	24,663

From it will be seen that, between the end of 1894 and the end of 1902, the total strength of all classes had increased to the extent of 1,390 men, and that the stoker class had increased by 2,454 men; while, on the other hand, the "sailor" classes had decreased to the extent of 1,064 men.

Of the number of men on the roll at the end of 1902, it was estimated that about 20,000 were employed in the Coasting and Home Trades (including Holland, Belgium, and France, from the River Elbe to Brest), or in fishing, or at home, and so would be available for service at short notice.

In 1897, the "sailor" classes were re-organised, and two new sections, known respectively as the "Qualified Seaman" Class and the "Seaman" Class, were instituted.

At the same time the old First Class and the old Second Class were closed as regards new enrolments, although men already in them were to be allowed to re-enrol from time to time, provided they had qualified as "trained men," i.e., had passed an examination in gun drill and rifle exercises; and promotion from the Second Class to the First Class was stopped.

Members of the First Class, however, were to be permitted to qualify for admission into the new "Qualified Seaman" Class; and members of the Second Class became eligible, under certain conditions, for promotion to the same section.

Under the new rules, all those entering the Reserve had to do so in the "Seaman" Class, with the following exceptions: *a.* Firemen. *b.* Boys. *c.* Men discharged from the Royal Navy as A.B. with good character.¹

With a continual shrinkage of the number of British seamen on board our merchant-ships, we have been becoming more and more dependent upon our fishermen to furnish the necessary recruits for the Royal Naval Reserve, and this new departure practically swept away the difference which previously existed between merchant sailors enlisted into that force and the fishing contingent.

The age, qualifications, pay, allowances, etc., for the "Seaman" Class remained the same as for the old Second Class, but an important

¹ Very few men of this description have joined the Royal Naval Reserve since the Royal Fleet Reserve has been established.

alteration was made in the conditions of service, inasmuch as the members of this new section were required to undergo a period of six months' training in the Royal Navy during their first term of enrolment, under penalty of discharge from the Reserve at the expiration of such term, and no re-enlistment was to be permitted in this section. (All service in the Fleet had previously been voluntary.)

Upon completion of the six months' training they were to be advanced to the "Qualified Seaman" Class, provided that :—*a*. They were favourably reported upon. *b*. They were able to pass a satisfactory examination as A.B. before a naval officer. *c*. They were medically fit. *d*. They were in all respects qualified. *e*. And they had attained the age of twenty years.

In the same way, the pay and allowances of men in the "Qualified Seaman" Class were to be identical with those of the old First Class; but in order to become eligible for a pension they were to be required to undergo a further period of six months' training in the Royal Navy.

Men belonging to the old First Class, upon undergoing the six months' naval training, were to be rated "Qualified Seamen"; and all retainers were to be continued to them during the period of their training.

These rules practically govern the force at the present day, although in 1901 the compulsory period of naval training was reduced from six months to three months, and minor alterations in details are made as deemed requisite.

Broadly, the qualifications for the Royal Naval Reserve at the present time are :—That applicants must be British subjects, able to understand and speak the English language; must be free from physical defect; must be in health, character, and every other respect, specially eligible; and must have been at sea within the four months prior to making application.

The engagements for all men, whether on enrolment or re-enrolment, are for a period of five years.

The limits of age on entry are :—For seamen late of the Royal Navy who are applicants for admission into the "Qualified Seaman" Class, up to 35 years of age; for the "Seaman" Class, not under 18 nor above 30; for Firemen, not under 21 nor above 35; and for Probationers, above 15 and under 18.

The standard of height for men is 5 feet 4 inches, and the chest measurement 32 inches; but in the case of stokers the height is not insisted upon, provided the men are tall enough to perform their particular work; and, under certain special circumstances, sailors may be accepted, by the authority of the Admiral-Superintendent, at a minimum height of 5 feet 3 inches.

Further, applicants for the "Seaman" Class, except certain apprentices, must prove that for the following periods they have led a seafaring life, either in foreign-going, coasting, fishing, or other vessels :—Men over 18 and under 21 years of age, at least two years; and men over 21, at least three years.

Fishermen who regularly follow their calling, and lead a seafaring life as such, may be enrolled.

In the case of apprentices who have completed their indentures, for a term of not less than two years, in any class of vessel, no further proof of service is required. Time served in a mercantile marine training-ship (not a reformatory) counts as half-time towards the qualifying period for the "Seaman" Class.

No men are eligible for the "Seaman" Class unless they can box the compass, steer, and heave the lead, know the marks on the lead-line, and are able to pull a strong oar; moreover, they must make a declaration that it is their intention to follow the sea for a period of at least five years.

Entry into the Third Class (Boys) was closed in January, 1899, and as the class itself will become extinct during the course of the present year, it is not necessary to recapitulate the qualifications formerly required for this section.

In the place of the Third Class there is a new Class of Probationers (boy sailors), of which more will be said hereafter.

Applicants for enrolment as Firemen must prove two years' service at sea with "very good" discharges both for ability and conduct, of which period at least one year must have been in the capacity of "fireman and trimmer," "fireman," or in a higher stokehold or engine-room capacity, and they must declare that it is their intention to follow the sea service for at least five years from the time of their engagement.

Stokers, late of the Royal Navy, may also be enrolled as firemen in the Royal Naval Reserve.

The men are drilled either in special batteries, on board special drill-ships, or on board coast-guard ships,¹ and, as we have seen, a period of training in the Fleet is also provided for.

All classes, with the exception of firemen and probationers, are required to drill for twenty-eight days in each year.

Firemen are required to drill for twenty-one days during the first year of their enrolment, and for fourteen days in each subsequent year.

Probationers are not required to drill until they have passed into the "Seaman" Class, which they are to do when they reach the age of 18, provided they have followed a seafaring life for two years.

All Royal Naval Reserve men when at drill are subject to the same discipline as men of the Royal Navy.

With regard to training in the Fleet, 827 "Qualified Seamen" and "Seamen" were embarked in 1901; and 1,207 in 1902; while 605 more went afloat in January of the present year.

The following rates of pay are given when on drill:—"Qualified Seamen," First Class men (old system), and Able Seamen of the Second Class (old system), 1s. 4d. per day; "Seamen," and Second Class men (old system) other than those just mentioned, 1s. 1d. per day; Third Class, 7d. per day; and Firemen, 1s. 9d. per day. Trained men receive 1d. per day extra while on drill; and when on drill, but not actually embarked on board one of His Majesty's ships, all classes receive 1s. 4d. per day extra in lieu of victuals, and 4d. per day as lodging allowance.

¹ Owing to the changes consequent upon the establishment of the Home Fleet, these vessels are no longer available, but the second-class cruisers "Andromache," "Æolus," "Apollo," "Melampus," "Sappho," and "Spartan," have now (September, 1903) been set apart as sea-going drill-ships for the Royal Naval Reserve, with their headquarters respectively at Harwich (North Shields for the present), Southampton Water, Holyhead, Queenstown, and Kingstown.

All Classes receive a certain amount of uniform clothing free, their kit being further increased upon their going afloat for summer manoeuvres, training, or other service in the Fleet.

Retainers at the following rates are paid:—“Qualified Seaman” Class and First Class (old system), £6 a year; “Seaman” Class and Second Class (old system), £3 5s. a year; and Firemen, £6 a year.

Royal Naval Reserve men are eligible for employment in the Coast-guard, and some of them are so serving.

There are also various other advantages, and in the event of men being wounded or killed in war, they or their families would be in precisely the same position as if they had belonged to the regular service.

The Naval Reserves Committee have made various recommendations with regard to this portion of the force, the principal of which may be briefly summarised as follows:—

1. That the limit confining the force to 30,000 men should be removed. (This has already been done.)
2. That Royal Naval Reserve men, qualified in other respects, if over 45 and less than 49 years of age, should be allowed to re-enrol to complete the age of 50.
3. That travelling allowances should be paid on a more liberal scale.
4. That men should be given the option of receiving at the age of 55 the purchase value of the whole, or a portion, of their pensions at that time.
5. That the clause in the regulations preventing men enrolling who have left the sea for more than four months should, in the case of men of sufficient sea service, be modified, and that the clause compelling men to engage to follow the sea for the first five years of their enrolment should also be revised.
6. That Thames watermen, and others in similar employment, should be eligible.
7. That in order to attract petty officers and A.B.'s of the merchant service, skippers and second hands of fishing boats of twenty-five tons and upwards, and men of similar qualifications employed in yachts, who are at present only eligible to enrol in the lowest class, and consequently refrain from joining, either a scheme set forth in the appendix should be adopted, or a simpler plan be devised, such as the establishment of a superior “seaman” class with a higher retainer, say of £4 10s.
8. That extra drill batteries should be established at several large fishing ports where, owing to their distance from a battery, very few fishermen at present enrol.
9. That the numbers raised in each locality should be limited, so as to ensure a better distribution of Reserve men over the country.
10. That the Royal Naval Reserve should be brought together, whenever practicable, to take part in public functions.
11. That ultimately the establishment of a petty officer rating for Royal Naval Reserve seamen will probably be desirable; and that, in accordance with the recommendation of the Admiral-Superintendent, the rating of leading-seaman should be adopted as a present measure.
12. That it would be desirable to impress on captains of His Majesty's ships embarking Reserves, that the primary object in the case of those men is instruction, and that their other duties should be confined to such cleaning of the ship as is fairly their share, and to

such general work as the proportion they form of the crew demands—but no more than that.

13. That "Qualified Seamen" should wear a distinctive badge, which should be designed so as not to be confused with any existing badges.

14. That in drill-ships and batteries the instruction should be assimilated to that given at sea, and be carried out with such modern guns as can be provided.

15. That an extension of the system of employing sea-going vessels as drill-ships is desirable. (This is being carried out.)

16. That men should join at stated intervals for their training in drill-ships and batteries, whenever this can be done without too seriously interfering with their ordinary employment.

17. That further supervision in drill-ships and batteries by gunnery or other qualified lieutenants is desirable.

18. That drill officers and chief instructors in Royal Naval Reserve batteries should re-qualify periodically in the gunnery schools, and on no account be allowed to get out of date.

19. That the present payment of 1d. a day to "trained men" for the period of training only is insufficient, and that an additional gratuity of 10s. should be given on qualification for this rating.

20. That it is desirable that quartermasters and men of other superior ratings in the merchant service should be permitted to pass a qualifying examination, in the same way that officers do, if unable to undergo the twenty-eight days' drill.

21. That as there is reason to suppose that many stokers with previous experience as firemen afloat are now employed in ship-building and engineering yards, etc., the present Royal Naval Reserve Fireman Class should be opened to those men by a relaxation of the rules which require that men applying for enrolment must have been at sea within four months, and that they must declare their intention to follow the sea service for at least five years.

22. That a special class of Royal Naval Reserve firemen should be established for stokers having not less than two years' experience in gas or electric light factories, or other works. That they should be able to produce satisfactory evidence of proficiency and good conduct, and should be liable to discharge from the Royal Naval Reserve in the event of their permanently abandoning the work of stokers. That they should have the same advantages as the present Fireman Class, but that training in His Majesty's ships should be compulsory, and should be for the same periods as for "Qualified Seamen," namely, three months to qualify for retainer, and two further periods of three months, or one of six months, to qualify for pension. That during the three months afloat the instruction should be chiefly in the engine-room, and that the £6 retainer should not be given until after the first course, and after passing a test of efficiency. Also, that the annual training on shore, in years when the men do not embark, should be for fourteen days, as is the case with the present Fireman Class.

23. That with regard to the clause in the agreement governing subsidised steamers, which states that if white firemen be employed a certain proportion of them must belong to the Reserve, it being stated by the owners that they cannot get the necessary number of Reserve firemen, and are accordingly driven to employ Lascars, which is admissible under the terms of the said agreement, it is suggested that as a mode of finding employment for the non-continuous stokers whom it is

proposed should be trained in the Royal Navy and then transferred to the Royal Fleet Reserve, the entire crew of subsidised vessels should be either Royal Naval Reserve or Royal Fleet Reserve men.

The Committee then go on to remark that they have had a very favourable account given them of the efficiency both of Lascars and Kroomen as stokers, but think that the details of any plan for forming a Reserve from this source for service when needed, should be discussed with the governors and the commanders-in-chief on the respective naval stations. However, they consider that among Lascars and Kroomen there is a supply of stokers for emergency which is too valuable to be neglected.

The Committee, although without full information as to the prospects and desirability of employing Chinamen, express the opinion that desirable men could be found at Hong-Kong and Singapore, and in view of the possible great supply of stokers from this source, they consider the question, like that regarding Lascars and Kroomen, to be well worthy of attention.

In conclusion, the Committee emphasise the following facts:—

1. That the need of Reserve stokers is far more pressing than that of Reserve seamen, and they hope this will be borne in mind both in Malta and all other colonies where Reserves may be established, special classes of Reserve firemen being, if necessary, established to suit local conditions.
2. That there will be great need of Reserves at the disposal of the admirals of our squadrons operating in the waters of the Pacific, and that colonies easily accessible to ships in those waters should be specially encouraged to establish Naval Reserves.

The recommendations of the Committee appear to be so good generally that there is really very little to criticise. However, there are two points to which I would like to draw attention. One of them is the suggestion that, if possible, men should commence their drills at stated periods. Now from a naval point of view, and also from an instructional point of view, it is undoubtedly a good idea, and yet I fear that the rule would be very unsatisfactory in its working, and might choke off recruits if it were thought that it would be strictly enforced. In fact, notwithstanding the undeniable advantages which the practice presents in many ways, I have sometimes thought that, provided it were possible, it might be desirable to even relax the rule which already exists that Reserve men may only join for training in the Fleet during the first three days in the months of January, April, July, and October, and to substitute for those periods the first day in each month.

The other point—and I should like to draw special attention to this—is the recommendation that the Royal Naval Reserve should be brought together, whenever practicable, to take part in public functions. It would seem to be of the greatest importance to bring home to all sections of the Royal Naval Reserve the great fact that they do not form a despised or neglected branch of our naval defences, but rather hold no mean position as an integral portion of that grandest of all Services, the Royal Navy of Great Britain, and nothing can more effectually instil this idea into their breasts than the public recognition

of the force upon gala occasions. A strong feeling of *esprit de corps* is what is specially needed, and those officially connected with the Reserve, whether naval officers or civilians, can, if they like, do much to promote it.

Turning to the early history of the Royal Naval Reserve, we find that in the beginning only one class, now the First Class (old system), was established. This class originally consisted of petty officers and able seamen of the mercantile marine (skippers and second hands of fishing vessels being subsequently included early in the eighties), and at the end of 1860—the first year of its existence—numbered 2,879 men. By the end of 1865 it had increased to 16,996 men; then a decline set in, and at the end of 1872 only 11,726 men remained; accordingly, to remedy this very unsatisfactory state of affairs, the Second Class (old system) was formed in the latter part of the last-mentioned year, to be recruited from among ordinary seamen and fishermen.

In 1877, the Third Class (boys), never a satisfactory feature of the Reserve, inasmuch as its members were readily lost sight of, was instituted.

In 1886, the Class of Firemen was added; this section being remodelled in 1893.

In 1897, as we have already seen, the "Qualified Seaman" and "Seaman" Classes were introduced.

In 1898, the Class of Probationers, previously mentioned, was formed. In this connection, shipowners were to obtain a proportionate reduction of light dues on account of the number of boys carried in their respective ships, provided such boys were entered in the Royal Naval Reserve as "Probationers." However, the well-meant plan—which is inherently defective, inasmuch as it gives an undue advantage to steamers over sailing vessels—owing to the friction existing with regard to the question of the payment of light dues generally, has never been popular among shipowners. Moreover, although a certain number of boys has gone to sea under this scheme, their tie to the Reserve is only nominal, they not having even so much as a book to produce, and therefore it is not surprising that when the time comes for them to be advanced to the "Seaman" Class, a very large percentage is not forthcoming. Accordingly, so far as benefit to the Royal Naval Reserve is concerned, the Probationer Class may be pronounced a failure.

Unfortunately—and it is a matter of common knowledge—we have to deplore the irrefutable fact that the number of European British subjects employed in our vast mercantile marine is constantly on the decline. This sad state of affairs has been brought about by a variety of circumstances which need not be entered into upon this occasion, but the broad reality remains that the red ensign waves over a vast and ever-increasing horde of aliens; and there is good reason to believe that the returns of the future will be still more unpleasant reading than are those in our hands to-day.

I do not propose to enter into any speculations with regard to the extent of our seafaring population as a whole, but will confine myself to what may be termed the "active list" of the mercantile marine, the strength of which is known with approximate accuracy.

From three census returns, prepared by the Registrar-General of Shipping and Seamen's Department (at the instance of the late Mr. J.

Clark Hall), we are able to ascertain the actual number, ratings, and nationalities of all persons employed on board British vessels registered under Part I., and under both Parts I. and IV. of the Merchant Shipping Act, 1894, in the British Islands, respectively on April 5th, 1891, March 25th, 1896, and March 31st, 1901; and the figures so obtained cast a very strong light upon the above-mentioned shrinkage of British seamen, as the following table will show:—

Part I. (Trading Vessels).

—	April, 1891.	March, 1896.	March, 1901.
British Seamen	127,567	125,009	120,412
Lascars	21,322	27,911	33,610
Foreign Seamen	23,884	27,446	32,614
Total	172,773	180,366	186,636

Parts I. and IV. (Fishing Vessels).

British Seamen	17,831	18,827	18,874
Foreign Seamen	Not given.	309	628
Total	17,831	19,136	19,502
Grand Total	190,604	199,502	206,138

NOTE.—The term "seaman" when used in connection with these tables is applied to all persons, irrespective of rating and sex, although masters, pilots, and apprentices are usually excluded from this heading.

A comparison of the statistics contained in Part I. of that table discloses the fact that, while the total number of people employed in March, 1901, when compared with the whole of those employed in April, 1891, gives a gross increase of 13,863, yet this accession is a good deal more than accounted for by Lascars and foreigners—Lascars being +12,288, foreigners +8,730, and British seamen -7,155 persons.

Of course, Lascars are subjects of the King, and, personally, I have always maintained that, under no circumstances, should they be debarred from any employment under the British flag.

Foreigners stand on a different footing, and while few of them are to be found in our coasting or fishing trades, they attain their maximum number among the sailors, i.e., able seamen, ordinary seamen, and seamen undefined, manning our foreign-going sailing ships, the percentage in those vessels having risen from 39 in 1891 to 52·3 in 1901.

The following is an analysis of the 32,614 foreigners employed in 1901, as regards their respective countries:—

Sweden	5,999	Denmark	1,588
Germany	5,110	Holland	1,201
Norway	3,880	Italy	1,552
United States of America ...	2,748	France	663
Russia	2,012	Other countries, or not stated	7,861

The percentage of foreigners among the masters, mates, and engineers employed in our foreign trade is thus shown:—

—	1891.	1896.	1901.
Masters ...	3·5	3·4	2·3
Mates ...	4·6	4·2	4·1
Engineers ...	2·8	2·2	2·5

These percentages are small, and their main importance consists in their representing a certain number of foreigners placed in positions which enable them to encourage the employment of other aliens.

Similarly, we have the following percentages of foreigners among the other ratings:—

—	1891.	1896.	1901.
Petty Officers ...	27·2	30·8	39·3
Sailors ...	34·3	39·6	44·0
Firemen and Trimmers	18·7	23·5	34·6
Stewards, Cooks, etc. ...	13·2	14·1	15·5

Taking the British sailors, *i.e.*, able seamen, ordinary seamen, and seamen undefined, engaged in the coasting and foreign trades, we find that they numbered 39,794 in 1891; 33,568 in 1896; and 28,698 in 1901; being a decrease of 11,096 in ten years.

British firemen and trimmers for the same years numbered 14,034, 13,567, and 13,342.

I would once more remind you that the foregoing figures only apply to the people actually employed afloat on the particular day in each year when the census was taken.

However, according to the Registrar-General's tables showing the progress of British merchant shipping in 1901, there were altogether 247,973 persons employed in the mercantile marine during that year, of whom 37,431 were Lascars and 37,630 foreigners, the proportion of aliens to every hundred British subjects (exclusive of Lascars) being 21·76.

Comparing 1896 with 1901 by the same tables, it is seen that the total number of persons employed in the latter year was +7,493; British subjects, -13,264; Lascars, +13,394; and foreigners, +7,363; while the proportion of aliens was +5·5 to every hundred British subjects, exclusive of Lascars.

As I have refrained from entering into the various reasons that may be assigned for the decline of British merchant seamen, so I will refrain from discussing any possible remedies; but there is one recommendation made by the Board of Trade Committee, which has recently been sitting to inquire into different matters connected with the mercantile marine, that I feel I cannot pass without remark.

It is that: "Facilities be given to foreign seamen, who have served for four years on British merchant ships, to become, by an easy process, without expense, British subjects by naturalisation."¹

This seems to be a novel method of manufacturing British seamen!

Of course, I am perfectly well aware that for centuries past we have had a proportion of foreigners in our mercantile marine, and I am equally well acquainted with the fact that numbers of them have served in the Royal Navy even during war, but all the same I hold the view that, under existing conditions, they constitute a national danger.

However, if we must have large numbers of foreign seamen in our mercantile marine, I suppose we must have them; but, for Heaven's sake, do not let us alter their distinctive trade marks, and, by pretending that they are what they are not, still further help to lull our countrymen to sleep in false security!

I consider that I should fail in a plain duty did I not utter a vigorous protest.

Although we have an enormous merchant fleet, manned by a large personnel, when deductions are made from the latter on account of Lascars (not at present utilised for war purposes), foreigners, members of unsuitable ratings, persons over age, men physically incapable of serving in the Royal Navy, etc., we find the recruiting field for the Royal Naval Reserve very considerably narrowed down in that direction; moreover, contemplation of the various circumstances connected with the question imbue us with the unpleasant conviction that as a recruiting ground for an auxiliary force, the mercantile marine, so far as its rank and file are concerned, is becoming less valuable every year.

Again, there is another aspect of the case put forward by the Naval Reserves Committee, which under present circumstances is worthy of close attention, and it is that: "In considering the extent to which the Navy should depend upon the mercantile marine, it has to be borne in mind that it is undesirable to draw too largely upon it for a Reserve. One of the objects of a strong Navy is to enable our merchant ships to keep the sea in time of war, and this object would be defeated if too many seamen and firemen were suddenly withdrawn from the mercantile marine and a considerable portion of it laid up in consequence for want of crews."

No doubt, if it were only a question of shipowners suffering in time of war for a state of things for which they are partly responsible, the laying up of vessels in this way would be comparatively immaterial. But, in reality, it is a much larger question, as it is a matter of vital national importance that, come what may, not only should our food supply be fully maintained during the continuance of hostilities, but also that our ordinary trade should be carried on, as far as practicable, in order that the masses may be enabled to earn money wherever to supply their daily needs.

¹ It would appear that this suggestion emanated from the Shipping Federation, and was adopted by the Board of Trade Committee. By an order of the Secretary of State for the Home Department, dated 4th August, 1903, foreign merchant seamen who have served on board of British merchant ships, and resided within the United Kingdom for five years, within the space of the last eight years, can become British subjects by naturalisation at a cost of about five shillings.

Therefore, taking into consideration all the important factors involved in the case, although our fishermen (many of whom will be required to pursue their ordinary avocation during war) may be utilised to a greater extent than they now are, the Committee, in their desire to maintain and further develop the Royal Naval Reserve, seem to have had little alternative but to recommend the enlarging of its recruiting area, and, as we have seen, they have elected to do so by the inclusion of two new bodies in the shape of Thames and other watermen and gas and other shore stokers.

That it should be in any way necessary for the Royal Naval Reserve to seek outside the limits of our seafaring and fishing populations for its members is naturally a matter for profound regret to many, and especially so to those among us who have long been identified with both it and the mercantile marine; however, we are bound to accept the logic of stern necessity, must bow to the inevitable, and can only sincerely and devoutly hope that the suggested new departure, if adopted by the authorities, may prove in every way advantageous to the State.

Admiral the Hon. Sir E. R. FREMANTLE, G.C.B., C.M.G. (Rear-Admiral of the United Kingdom):—I think Commander Caborne has given us a very interesting epitome of the state of affairs in the Royal Naval Reserve. I am afraid I am a little disappointed in regard to the lack of suggestions as to improvements, but perhaps we may suppose that the Reserve Committee has exhausted the suggestions, and therefore there was not very much left for the lecturer to say. I agree with the lecturer in generally appreciating the proposals which were made by the Reserve Committee, presided over by Sir Edward Grey, and we hope that very great advantage will result from them. There are one or two points, not perhaps of very much importance, to which I should like to draw attention. The lecturer made the remark that it is advisable that a certain amount of marine engineering should be known and appreciated by the deck officers, and he seemed to think that the Admiralty ought to pay for that. In view of the fact that we have at present fortunately the full number of Reserve officers for whom a vote is taken, and that we know there are 300 or 400 applicants, I think if the Admiralty desire those Reserve officers to have that extra knowledge they will simply ask for it, and expect it to be provided, possibly free of expense. However, that is a detail. There is one remark in the lecture which bears upon a question directly connected with Lord Selborne's scheme. The lecturer says that some of the deck officers are very likely to find themselves pushed to the wall through their lack of knowledge of engineering. That touches on a question which has been raised in the course of the controversy, where it has been said over and over again that the large steamship companies do not find it necessary, and were not likely to find it necessary, that the officers in command should know anything about steam. On page 1233, par. 20, the lecturer says:—"It is desirable that quartermasters and men of other superior ratings in the merchant service should be permitted to pass a qualifying examination, in the same way that officers do, if unable to undergo the 28 days' drill." That is a quotation from the Reserve Committee's report, and I do not quite understand it.

Commander CABORNE:—Officers of the Royal Naval Reserve who cannot undergo their full 28 days' drill, or do not wish to do so, and who, after

examination have obtained what is known as a test certificate, are only required to perform 7 days' drill, and it is proposed that these men of superior ratings should be permitted to enjoy the same privilege.

Admiral Sir E. R. FREMANTLE :—Without gunnery training?

Commander CABORNE :—Oh no; they must drill for seven days. It is only extending to them the privilege which the officers have enjoyed for many years.

Admiral Sir E. R. FREMANTLE :—That is only a detail of not much importance. Then I should like to say a few words with regard to the foreigners in the mercantile marine. We all regret that state of affairs. We hoped against hope that it would be reduced. I quite agree with the lecturer that to label them as English, would be like putting our beak in the sand, as it were, and refusing to look at the facts, namely, that the mercantile marine is far too largely manned, and is daily increasingly manned, by foreigners. There are not many foreigners, as the Chairman knows perfectly well, in the Navy now, but there used to be a great many more. In the old revolutionary war, for instance, there was a considerable percentage of foreigners very often in the ships of the Royal Navy, but certainly it is not the case now. When I joined the Navy, I recollect that in the "Queen," in the Mediterranean in about 1849 or 1850, we had ten black men serving in the ship. I do not wish to make any further remarks. I think the epitome the lecturer has given us of the recommendations made by the Reserve Committee will be very useful to people who have not had the time to run through all the Blue Books. With a great many of his remarks I entirely agree. I could have wished sometimes that, with the large experience Captain Caborne has had, he had given us his own experience rather more often. There is one thing on which I think we shall all agree with him, namely, that the less the honorary rank given to the officers of the Naval Reserve the better. It is naturally keenly objected to by the officers of the mercantile marine themselves, who are the officers we have in the Royal Naval Reserve; and I really cannot see that any advantage would accrue, but very much the contrary, from the proposal of the committee to which Commander Caborne objects.

Lieut.-Colonel T. H. BAYLIS, K.C., M.A., V.D. (late 3rd Bn. Middlesex Regt.) :—Although I am a Volunteer officer, the question which has been raised by the lecturer touches the Volunteer Forces and Army generally. It is very easy to say "Come and join us," but the Services must be made more attractive, in order to get sufficient serviceable men and lads to join. Commander Caborne has suggested to make the Services more attractive by improving their status, in which I agree. Greater privileges should be given. But the whole crux of the question is "the pay." We can always get men if we pay them liberally, whether it is a barrister to conduct a case in Court, or in any other occupation. Good pay will command good men. I consider that officers of the Navy and Army are about the worst paid of any Service who expose their lives in their service of King and country. It may not be possible to further increase the pay in the Army and Navy, as a 1d. or 2d. a day increase pay per man would amount to an enormous sum. But it is of no use to have men who are of no service, but an incumbrance. Pensions and employments in civil life will induce more men and lads to join. I fully agree with what the lecturer has said about public

functions. We all like honours, and to appear before the world in a public capacity; it is only right we should; it is an honourable ambition. If soldiers and sailors were more generally employed in public functions, etc., the Service would become more popular. What is wanted in these scientific days is a really efficient *personnel*. I wish, as in the Navy, more inducements were offered to lads when they have a liking for the Service, to join and become serviceable and reliable soldiers, well disciplined and trained. In the long run, it would be attended with less expense.

Commander W. DAWSON, R.N. (Retired) :—It is not very safe for the greatest maritime Empire in the world to have only 25,000 men in its Royal Naval Reserve, after working it up for 24 years. Only 2,000 or 3,000 of these are in the long-voyage crews; and no doubt the numbers from this source will be much fewer as time goes on. British-born "A.B." sailors have left the long-voyage merchant-ships at the rate of 1,100 a year, for the last ten years; whilst in the same period the Royal Navy has doubled its number of British-born men. The Report of the Committee on the mercantile marine, just issued, states that "various causes have been assigned for the decrease of British seamen in the mercantile marine, but we do not doubt that the main cause is the superior attractiveness of shore employment, with its greater comforts and superior facilities for the maintenance of a home." But if this be the "main cause," how is it that British-born men have doubled in the Royal Navy in the last ten years? that in the coasting and the home trades, from Brest to the Elbe, British merchant seamen abound? that British yachts get British crews? and that in many foreign ships British sailors are largely found? There must be some other "cause" why long-voyage crews are not so British as short-voyage crews, and why 10,000 Chinamen and 23,000 other Asiatics have to be employed to fill vacancies in the Far East Trade; and 33,000 other foreigners in our foreign-going trade. The Report of the "Mercantile Marine Committee" does not notice that 23,000 officers, engineers, apprentices, seamen, firemen, stewards, and stewardesses, annually "desert" from British merchant-ships when in ports abroad, forfeiting all their unpaid wages and effects by doing so. No shipowner and no captain "deserts." From £100,000 to £200,000 unpaid wages are annually lost in this way to sailors and their families. What becomes of this hard-earned money? not one farthing of it reaches the Exchequer as section 232 of the Merchant Shipping Act, 1894, requires. If the Board of Trade were authorised to administer the unpaid wages and effects of "deserters," as it does those of "deceased seamen," one half of this so-called "desertion" would cease. In many ports abroad, seamen are entangled by crimps, and sold to ships requiring crews for £4 to £8 each man, *i.e.*, one to two months' wages; kidnapping British seamen for this purpose is commonly practised in some American ports, with the official knowledge of our Foreign Office. What do men go to sea for at all but to earn a living wage for themselves and for their families? If they and their families cannot obtain the fruits of the bread-winner's labour, why should men work at all? Can we imagine a shipwright, on the Clyde or the Tyne, driving a rivet, if his wages were kept from him and his family for one or two years, with the liability that if he absented himself from work for two days all his past earnings would be forfeited; and that if he did not thus forfeit his wages he would be obliged, at the end of the term, to go to Hamburg or Antwerp, or elsewhere, to receive in hard cash his £40 or £80 due, and be charged

10s. for an order transmitting the £40 home, or 20s. for transmitting the £80 home? Most of the rascalities practised on British merchant seamen occur in long-voyage ships, and are connected with money matters and the terms of engagement; and it is from those ships that the exodus of British-born sailors occurs. Yet "the Mercantile Marine Committee's Report" ignores the whole subject of the fruits of the labours of seafarers, as if it was not "the main cause" of the exodus. Give them frequent payments, continuous employment, and opportunities of regular divine worship, if you want British sailors to remain in long-voyage ships and available to become Royal Naval Reserve men. It may seem outside the question of so manning the mercantile marine, as to have Britons available for the Royal Naval Reserve; but look at the treatment received from the Government, by the captains, officers, and crews of H.M.'s transports and store-ships in the late war. They were the only body of non-combatants engaged in the South African war, to whom honours and medals were not given.¹ To the *land* transport corps were deservedly given honours, medals, and public recognition. Did not the "transport corps of the sea" do their work splendidly? Every sailor knows it was right well done, with skill, zeal, and efficiency. Yet, not a single honour was conferred on a captain or officer, and not a medal on a foremost seaman. And even as to medals, none were given even to the captains or officers of H.M.'s storeships. How can you expect seamen to be enthusiastic about the merchant branch of the sea service, if its members are singled out for official disfavour? This is not the way to encourage breadwinners to remain serving at sea, and thus to provide recruits for the Royal Naval Reserve.

Commander H. ACTON BLAKE, R.N.R. :—I am very sorry that I had not the opportunity of hearing the paper read, but I have come to make a few remarks with reference to it. In the main, I agree with the statements of Commander Caborne, and I very cordially indorse his remarks as to honorary commissions; but I think he has in this case rather laboured the point of the officers; not that I think the officers are not entitled to have the point laboured, but I think in this particular case he has put forward, on their behalf, a very ingenious scheme which does not come within the pale of practical politics to-day, with the conditions that obtain on board ship at the present time. Indeed, I do not think it is necessary, because the competition amongst junior officers in the mercantile marine, for commissions in the Royal Naval Reserve, is so keen at the present time, that if higher mathematics, or a knowledge of the steam engine, both of which are extremely good things for officers to know, should be necessary things, then the Lords of the Admiralty can really make any standard of entry they choose, and will get plenty of good men to educate themselves up to pass those examinations and obtain commissions. But what I do feel much more than that—and I am sure it is felt by a great many officers of the Reserve—is this, that once they obtain commissions, they should be given every opportunity of making themselves adepts in the use of modern weapons, taught by modern instructors and supervised by qualified commissioned officers of sufficient status to command respect, which has not always been the case in the past. But I think really

¹ This has since been remedied, and a special medal and ribbon has now been issued, which has been conferred by the King on a number of officers of the Mercantile Marine, who have been employed in transport work in connection with the late war in South Africa, and the China Expedition.—EDITOR.

the chief difficulty is the case of the men; I put the officers on one side. There is a greater difficulty there, because we have all been brought up to believe—I believe it was quite true in the past—that the mercantile marine was the nursery of the Navy. We have got to accept a very different condition of things now. Practically speaking, except for the resourcefulness which a man learns on board ship, and except for the habitude of the sea, which he acquires, I think, for the modern man o' war, a man taken straight on board from land, is almost as easily trained as one who has been to sea. It is very difficult to know where you are going to get the men from at the present time, but I think in this case, perhaps, one of the recommendations of the Naval Reserve Committee will help us out of the difficulty. We must look really to the Navy to be its own nursery, and look to the mercantile marine as a place where a man can go and obtain employment, after he has been trained by the non-continuous service system, such as is put forward by that Committee. That will release, I hope, a large number of good conduct men very frequently, but they will have to have some employment found for them. Naturally enough, the men would, if they could, find employment on shore, but there is not work for everybody on shore, and a certain number of them will, I hope and think, go into the mercantile marine, more especially if the recommendations of the Committee are adopted—recommendations which are framed with a view to bringing the conditions of life and living at sea up to the same standard as life and living are on shore at the present time. If those recommendations are accepted, we shall get the men to stay in the mercantile marine, which they will not do at the present time. One word with regard to Commander Caborne himself. He rather falls foul of the recommendation of the Committee, of which I happened to be a member, with regard to the facilities given for naturalisation of foreign seamen, and I think he calls on high Heaven to put it on one side. Now, as a matter of fact, we are a nation of naturalised foreigners; there is no getting away from that fact; and I think it is one of our strong points that we very willingly take the best of everything, whether it is men or not, and assimilate it to ourselves. And surely you are not going to treat a sailor differently from anyone else? This particular recommendation was put forward in the interests of a class of men, who, at the present time, are good citizens of our own country in everything, except calling themselves Britishers. They are men who have served many years in our ships, who have married British wives, and settled down, and whose children are British, and who would consider it as much a reproach to be called a foreigner in this country as I would. Those are the men in whose interest that particular recommendation was put forward. More than that: you might be turning aside a Goschen, or a Disraeli, or a Rothschild, who has as much right to get his chance, although he comes under the guise of a seaman, as he does if he brings an old clothes bag on his back, or comes with immense wealth in his possession. I think that is one of the things that want explaining away, and one of the reasons why I asked you to listen to me for a few moments to-day.

Commander D. WILSON-BARKER, R.N.R.:—Commander Caborne's paper is a valuable addition to his former contributions; he does useful service in clearly stating the position and prospects of the Naval Reserve. With regard to the effect of the calling out of the Reserve on the mercantile service, it would, I think, be interesting to know what would be the exact position, as to manning,

of some of the large liners, say half a dozen, should they be suddenly deprived of their Reserve officers and men. Doubtless numbers of vessels would be laid up in war time, and their crews, to a great extent, would be available as substitutes for the reservists. This matter, and its economic results might easily be investigated, and no one would be better qualified to undertake the task than the lecturer. Commander Caborne has alluded to my advocacy of steam training. I have exceptional opportunities and obligations for the careful investigations of all facts connected with sea training, and I am bound to consider and weigh the pros and cons. I am convinced that, except as chief officer, a young man gets very little experience in a sailing ship likely to be of use to him in a steamer, and the majority of steamship officers have never had charge of a watch in a sailing-ship. All that a steam-ship officer requires to know—and that is much—he can learn in a steamer. For the Naval Reserve some training on the mechanical side is not only desirable, but necessary. Many of the large steam lines offer exceptional opportunities and facilities to their apprentices, and I have much pleasure in stating that several of the well-known sailing-ship firms have also vastly improved their methods and arrangements in dealing with apprentices. I entirely agree with the lecturer in his advocacy of a course at Greenwich for the Naval Reserve officers desirous of thorough efficiency, but these officers should be paid in accordance with their ranks.

Commander CABORNE, in reply, said :—I do not think that Sir Edmund Fremantle quite understood me as to the proposed training of young Royal Naval Reserve officers. I expressly stated that although such training should be conducted under Admiralty auspices, the premiums and other incidental expenses would have to be paid by the boys' parents or guardians, the only exception being the last year's training, which would really be a period of naval training, and so could form a legitimate charge on the Navy Estimates. With regard to engineering, my argument, in brief, is this: that if naval officers, performing deck duties, are in the future to be something of engineers, then Royal Naval Reserve officers, who are called upon to serve side by side with them, must be something of engineers also. To-day's paper was intended to be more or less of a record of events, and I am sorry that the Admiral is disappointed because it contains little of my personal experiences and puts forward few suggestions from myself. But I may remark that I have been making suggestions here and elsewhere for many years past, and, although I did not intend to mention this fact, it is an intense satisfaction to me to know that most of those suggestions are now to be found embodied in the existing regulations. I am very much obliged to Colonel Baylis for his kindly remarks. I agree to a very large extent with the views expressed by Commander Dawson as to some of the causes affecting the decline of British merchant seamen, but I purposely omitted making any reference to such causes upon this occasion, as the matter is in itself a very big subject; accordingly, he must forgive me.

Commander DAWSON :—What I said was, that this learned Committee had shut their eyes closely, and did not see what was before them.

Commander CABORNE :—I beg your pardon, I thought you alluded to me. With respect to the lascars, according to the official returns, the great majority of them are Indians.

Commander DAWSON :—About one half, it may be.

Commander CABORNE :—I regret that I cannot agree with you upon this particular point. I am happy to find that Commander Acton-Blake is with me upon the question of honorary rank, and he thus endorses the opinion of every other officer to whom I have spoken. However, he raises the objection that my training scheme is not within the range of practical politics. I hope that it will come within that range before long. Of course, I do not mean my own particular scheme, as that is only put forward for the sake of discussion, but some scheme involving the same principle; and no one will be readier than myself to accept anyone else's plan if it is better than my own. I agree with him that competition is very keen for commissions in the Royal Naval Reserve, and I have illustrated that fact by showing the large number of applicants awaiting appointments. Once more I am in accord with him when he says that it is highly necessary to improve the conditions of life at sea, and unless that is done I am pretty certain that few of the proposed non-continuous seamen of the Royal Navy will afterwards be found afloat in the mercantile marine. Coming to the recommendation of the Board of Trade Committee that an easy and inexpensive method of naturalising foreign merchant seamen should be introduced, Commander Acton-Blake has just told us that, as a matter of fact, we are a nation of naturalised foreigners. Certainly I am aware that this portion of the island known as Great Britain was once peopled by Britons, and that it was afterwards overrun by Romans, Saxons, Danes, and eventually Normans; but it is a far cry from the eleventh century (the period of the last-named occurrence) to the twentieth century, and, while not forgetting the various distinctions which have always existed, and that the British Isles have sheltered numbers of aliens from time to time, I claim that my friend's statement, in its usually accepted sense, is quite incorrect. Even if it were accepted as correct, his assertion would probably equally apply to every race and nationality under the sun. He has told us that it is one of our strong points that we very willingly take the best of everything and assimilate it to ourselves, and asks why we should treat the foreign seaman differently. He has also explained that this recommendation was made in the interests of those foreign seamen, who marry British wives, and bring up families in this country; but its wording certainly does not indicate that, being of a general character. Now it is a matter of fact that a large number of the men who come to us are simply deserters from their own country's ships. Are they of the best? Again, the sea-port police-court records are constantly furnishing instances of un-English crimes, such as the use of the knife, committed by foreign seamen on board of our ships. Are they of the best? I have not waded through all the evidence given before the Committee, but I have noticed that in one instance a foreign seaman witness, presumably one of the persons in whose supposed interests the suggestion is made, while admitting that he had left his own country in order to avoid the conscription, expressed his willingness to join the Royal Naval Reserve, as he would be paid for doing so. Presumably naturalised British subjects would be eligible for enrolment, and I ask whether a man who has evaded his duty to his own country, and is willing to join the armed forces of another in consideration of receiving a certain number of pounds, shillings, and pence, is precisely the class of person who is wanted in the Royal Naval Reserve? Again, although the seamen naturalised in this way might be very willing to draw pay from the Admiralty in time of peace, what security is there that in time of emergency they would not forget the English language and their new nationality, and disappear? For my own part, I hold a very poor opinion of anyone, whether millionaire or pauper, who, except under distinctly and

absolutely exceptional circumstances, changes his nationality as he would his coat. It is a satisfaction to me that Commander Wilson-Barker endorses my views with regard to the necessity for Naval Reserve officers receiving some engineering training, and also approves of my advocacy of courses at Greenwich; for no one is more entitled to be listened to with respect upon the subject of the training of mercantile marine officers than he is. In conclusion, I must thank you for the kind manner in which you have received this paper, and I also desire to express my obligations to our Chairman for the honour he has done me by presiding this afternoon.

The CHAIRMAN (Admiral Sir Nathaniel Bowden-Smith, K.C.B.) :—In bringing this discussion to a conclusion, I will not detain you long. I quite agree with Sir Edmund Fremantle, that the paper we have just heard is a very interesting summary of what has taken place in connection with the Naval Reserve during the last 15 or 20 years, embracing that valuable report of the late Committee presided over by Sir Edward Grey. I am glad to notice from the statement that Commander Caborne has put before us that we have had a considerable increase in the number of officers of the Naval Reserve; and to hear from Commander Blake that there is such competition for entrance into the Naval Reserve. It must also be satisfactory to the mercantile marine that the Admiralty were able to promote two of the supplementary lieutenants to commanders. While on the question of Reserve officers, I must say that I agree with what fell from Commander Dawson, that the officers of our great mercantile marine who took part in the late war have not been rewarded in the way they ought to have been. It is satisfactory to see that the number of stokers in the Reserve has increased by something like 2,500 in the last few years. The lecturer says that our continuous service *personnel* in the Navy has attained what must be nearly its maximum limit, and I quite agree with him. It is getting a very serious question. We have been obliged to increase our Navy, both as regards ships and men, on account of the great increase in the Navies of foreign Powers, but there must be a limit. We cannot contemplate such a thing as going to war with the United States. But with other nations it is different, so we must, of course, keep pace with them to a certain extent; but our *personnel* has now arrived at such large numbers, that it is a serious question for our successors, considering the fact that naval service is long service, and that therefore the officers, and a large proportion of the men have eventually to be pensioned. The non-effective vote in the Navy Estimates is £2,350,000 for this year. Considering that we have nearly doubled our *personnel* in the last 10 or 15 years, we may take it that this vote in 20 years' time may amount to four millions; therefore, we must pay more attention to our Reserves, and not further increase the standing force. The late Committee have pointed out the way in which we might get stokers from gas works or factories. If men were given a retaining fee, they might be induced to serve on an emergency as stokers, and after a few weeks' instruction would render excellent service. Every man engaging also for the garrison artillery ought to be enlisted on the understanding that in any great emergency he is liable to serve on board ship. Their places might be filled by the Militia and Artillery Volunteers. In the history of our past wars, the ships that have been on the spot have constantly had to land men, and the Navy has taken part on shore, as you know, in a small way in many of our wars. Therefore, in a time of great emergency, if we were hard up for men, we ought to expect that, where it is possible, some portion of the Army,

such as the Garrison Artillery, should come and render us service on board ship. Then there is the question of the lascars and foreign seamen. I have known the lascars (who are British subjects) for the last 50 years; they are a useful lot of men, sober and industrious, and do excellent work on board the ships of the mercantile marine, especially in the tropics. The recent attempt by the Australian Commonwealth to exclude these men from the steamers carrying our mails to Australia is simply preposterous. It has, however, been well dealt with by that eminent statesman, our present Colonial Secretary. I would like to point out that these lascars number between 30,000 and 40,000, and if they were sent ashore we have no white Britishers to take their places. They are a most valuable body of men, even in war-time, as they would materially assist in keeping our mercantile marine going, which is what we want. I can only say in conclusion, that Commander Caborne's paper will be a useful addition to our JOURNAL, and the information given will be read with interest in many a ward-room mess; and I feel sure you will join me in according him a hearty vote of thanks.

THE BRIGADE OF GRENADIERS OF SARDINIA.

By Lieut.-General F. H. TYRRELL (late Indian Army).

IN the Royal Museum of Porcelain at Dresden may be seen a set of eight china vases, which Augustus the Strong, Elector of Saxony and King of Poland, obtained from King Frederick William of Prussia in exchange for a regiment of dragoons. At that date Saxony and Prussia were States of almost equal strength and importance: to-day, less than two centuries later, Prussia stands at the head of the German Empire, and has a foremost place among the great Powers of the world; while Saxony is her humble and feeble satellite. That transaction of exchange or barter foreshadowed the future of the two States. While King Augustus was accumulating *bric-à-brac*, King Frederick William was busy perfecting the formidable Army which, under the leadership of his son, was a few years later to wrest Silesia from Austria, and to raise Prussia to the first rank among the nations of Europe. The virtue of the Prussian military system, initiated by the Great Elector, and developed and perfected by his successors, has raised the princes of the House of Hohenzollern from the petty rank of Electors of Brandenburg to the Imperial throne of United Germany.

There is another Royal House in Europe which has, like that of Hohenzollern, raised itself from the chieftainship of a petty principality to the kingship of a great and united nation. The House of Savoy has elevated itself to power and fortune by the warlike genius of its princes, and by their devotion to the military art. The opposite ends of Europe have re-echoed with the fame of their exploits; the fields of Flanders witnessed the triumph of Emmanuel Philibert at St. Quentin, and the name of Eugene of Savoy was a terror to the Turks by the banks of the Danube and beneath the walls of Belgrade. But it was chiefly the care which they bestowed upon the training and organisation of their military forces that ensured their fortune and success. During the sixteenth, seventeenth, and eighteenth centuries, Italy was the common battle-ground of the Armies of the three great military Powers of France, Spain, and Germany, and her fertile fields and fair cities were alternately the prize of the victor of the day. It was only by the exercise of the greatest political sagacity and the highest military talent that the princes of the little buffer State of Savoy, exposed to the shocks of a continuous warfare waged by the rival great Powers across its frontiers, could maintain its independence and its integrity; but so ably did they play their part, and so well were they seconded by their gallant and efficient little Piedmontese Army, that the prize for which the mighty monarchs around them had so long contended fell into their hands, and the iron crown, to gain possession of which the blood and treasure of Spain, France,

and Austria had in turn been poured forth in vain, was placed upon their brows, to the admiration of Europe, and amid the acclamations of a United Italian nation.

The national Army of Italy dates its creation back only to the year 1860; but at its head still stand the veteran regiments of the Piedmontese Army, the heavy cavalry of Nizza, Piemonte Reale, and Savoia, the infantry regiments of the Grenadiers of Sardinia, of the King, of Piedmont, of Aosta, of Cunco, of the Queen, of Casale, of Pinerolo, of Savona and Acqui, whose origin can be traced back to the first institution of Standing Armies in Europe. The old Piedmontese Army might well be called, in the words which the late Lord Sandhurst applied to another famous body of troops, the steel head of the lance which defends Italy; and its strenuous career and glorious traditions have been lately commemorated in the graphic and minute historical account of one of its most famous corps, from the pen of Major Domenico Guerrini, entitled "La Brigata dei Granatieri di Sardegna," of which the following brief summary is here presented to the readers of the JOURNAL.

Charles Emmanuel II., Grand Duke of Savoy, and titular King of Cyprus, revived the obligation of service in the general levy, or national Militia, which had fallen into disuse in feudal times, and organised the force in permanent territorial regiments. The only regular soldiers in the Grand Duchy at the time of his accession were some companies of gentlemen-at-arms, and Swiss halberdiers, who acted as his body-guards, and some regiments of foreign mercenaries; but he resolved to possess a Standing Army recruited from among his own subjects, and in 1659, just one year previous to the origin of the present British Army, he raised a regiment of foot guards of twelve companies, and several other regiments of infantry. They were all recruited by voluntary enlistment; the strength of the companies varied from seventy to one hundred men, according to circumstances, the colonel's company being kept at a higher strength than the others; the officers of each company were a captain, lieutenant, and ensign, the companies belonging to the colonel and lieut-colonel being commanded by captain-lieutenants, or, in modern *parlance*, brevet captains. The regimental staff was composed of a colonel, a lieut-colonel, a sergeant-major, an adjutant, a chaplain, and a surgeon.

The field officers and the captains were only the leaders of their men; the sergeant-major was the instructor of the regiment, and seems to have been chiefly responsible for its training and discipline. We find the Grand Duke issuing an order that the colonel should be present with his regiment for at least four months in the year. The Guards received higher pay than the Line, and their officers had a step of Army rank superior to their rank in the Army, a practice that obtained in all the Armies of Europe, and survived in the British Army until late in the nineteenth century. The old company muster-rolls show that most of the men in the Regiment of Guards were Piedmontese, only a few being Savoyards, and still fewer foreigners, mostly Frenchmen. A curious practice prevailed of distinguishing each soldier by a *nom de guerre*, in addition to his real name. Most of these names were fanciful, such as "Passe-partout," "Sans Souci," "La Liberté," "La Violetta," "Prêt-à-boyre" (not a bad nickname, the last, for the proverbially thirsty Grenadier); others were place names, such as "Turin," "Castiale," etc., and some were abbreviations or transmutations of the family name, such as "Bruno" for

Le Brun. These *noms de guerre* are constantly repeated throughout the regiment, but never twice in the same company.

Young men of good family were allowed to enrol themselves as privates in the Guards, without serving in the ranks or doing duty in time of peace, but were liable to be called to the colours when their services were required. They provided their own arms and uniform, and their status seems to have been much like that of the *Ein Jahr Freiwilliger* in the German Army to-day. They were called Volunteers, and probably many of them served with the hope of obtaining a commission. A Grand Ducal ordinance fixes their number at 10 per company, or 200 per regiment, as there were at that time twenty companies in it. This custom must soon have fallen into disuse, for after the end of the seventeenth century we hear no more of these Volunteers.

The Grand Dukes were often called on to appease quarrels and settle disputes about rank and precedence between the Regiment of Guards and the gentlemen-troopers of the Company of Bodyguards. In 1664, the Grand Duke regulated the precedence of all the corps, and gave the regiments, which had till then borne the names of their colonels, permanent titles. The six regiments of Piedmontese infantry were ranked and named as follows: the Guards, Savoy, Aosta, Montferrat, Piedmont, and Nice. There were also four foreign regiments.

The Regiment of Guards, now called the Grenadiers of Sardinia, boasts of having been engaged during the two hundred and fifty years of its embodiment in more than one hundred and twenty battles and combats, very few of which we shall be able to notice in this brief account. Its first essay in arms was inglorious and unsuccessful. The era of religious wars was not yet over in Europe, and the Grand Dukes were champions of the Catholic cause.

The Waldenses had three times risen in arms against their persecuting sovereigns, and had at length been granted freedom of worship. But these pious folk were not at all inclined to exercise the same toleration towards the faith of their Catholic neighbours, and continual quarrels between them resulted in 1664 in another appeal to arms. The Grand Ducal troops invaded the valleys; and the Guards were repulsed with loss in an attack on the village of Angrogna; but in fact their discomfiture was due as much to the difficulties of the ground as to the courage of the defenders. A peace was soon afterwards patched up on the basis of "forget and forgive," and things went on quietly for a few years more.

The eyes of all Christendom were now turned towards Crete, where the Venetians had gallantly held the town of Candia against the repeated assaults of the Turks, whose army had been encamped under its walls for twenty consecutive years. The noble youth of all the countries of Europe who desired to win their spurs, and the soldiers of fortune who sought a field for their talents, all betook themselves to Venice to embark for Candia, and the Grand Duke Charles Emmanuel on his part sent a brigade of two thousand regular troops, who were accompanied by many noble and gallant volunteers. They arrived in Candia in 1665 just as the Turks had opened regular approaches against the ramparts for the third time. Every resource known to the engineering skill of the time was employed by both the assailants and the defenders; and the siege of Candia may be said to have formed the school of military engineering which produced Vauban and Cohorn.

The siege was pressed closely and vigorously without intermission for three years; the glacis was honeycombed with the Turkish trenches till it resembled a gigantic labyrinthine rabbit-warren, while the ramparts were reduced by the springing of mines to a heap of smoking ruins. Morosini finally obtained an honourable capitulation, the Grand Vazis being only too glad to get possession on any terms of the place, before the walls of which 70,000 Turks had fallen. The survivors of the Savoyard Brigade, reduced to a few hundreds, returned home, and as a reward for their heroism were all enrolled forthwith in the Regiment of Guards, which hence considered itself entitled to count the defence of Candia among its battle honours. In 1680 the Grand Duke Victor Amadeo II. divided the Regiment of Guards into two battalions: the large regiments of twelve to twenty companies were found too large for a tactical unit, which henceforth became the battalion; sometime later a grenadier company was added to each battalion. The war of sieges which had been inaugurated in Europe by the siege of Candia, gave rise to the employment of grenadiers, who were furnished with grenades to search out the trenches and covered ways, and with hatchets to hew down the palisades. They took the place of the old *enfans perdus*, and were first instituted in the French Army, which was at that time admittedly the model for all Europe. In the Piedmontese Army the grenadiers were at first formed in squads of six men picked from each company for their intelligence, strength, and activity; they were mustered and paid in their own companies, but on parade they formed a separate body under selected officers. In line they formed on the flanks; in column, as advance and rear guards; in square, they were divided into four sections occupying the angles. Diagrams of all the formations and evolutions of the company, and of the battalion are given in Major Guerrini's book, with all the instructions and regulations of the period relating to parades and duties. The review exercise of the grenadiers consisted in firing three volleys, fixing bayonets, and making three lunges with the bayonet; then they slung their muskets, in three motions; handled their grenades, three motions; prepared the fuse, two motions; handled their matches, two motions; blew up their matches, two motions; lighted the fuse and threw the grenade, four motions; replaced their matches, two motions; and drew their sabres, two motions. They then made a charge as if attacking the enemy, sword in hand. Soon after their first institution, all the grenadiers of a battalion were united in a permanent company, which was recruited by men picked from the battalion companies, while the officers were selected by the colonel from the whole body of officers of the regiment. For battles or assaults, the grenadier companies were often separated from their regiments and formed into provisional battalions. As late as 1817 all the grenadier companies of the British and native infantry regiments of the Bengal Army were thus formed into special battalions for the campaign against the Mahrattas and Pindarris.

The officers and sergeants of grenadier companies were armed with fusils and bayonets instead of the half-pikes and halberds carried by those of the battalion companies. It has been said that the reason for the grenadiers wearing "furred caps with coped crowns like Janissaries" was the difficulty of slingng their muskets over the ordinary wide-brimmed hat; they were the first soldiers who saluted by raising the hand to the cap, all other troops saluting by pulling off

their hats. The Army of Savoy had long been distinguished by blue sashes or ribbons. The first uniform worn by the Guards on their formation in 1659 was a wide-brimmed beaver or felt hat trimmed with gold lace, and a loose blue coat with gilt buttons and scarlet lining; in fine weather the lapels were turned back and the cuffs turned up, showing the scarlet lining. The long waistcoat and knee-breeches were scarlet and the stockings blue. A broad buff leather bandolier was worn over the left shoulder, and a similar waist-belt, worn under the coat carried the priming flask and the sword. The armament was a matchlock musket, which was soon after changed to a flint-lock and bayonet. Military uniform was at first simply the civilian dress of the period, of a uniform cut and colour; and in the days of Marlborough the soldier wore a practical and comfortable dress, unhampered by the conventions afterwards imposed by the military foppery of the eighteenth century. King Louis XIV. had introduced a uniform dress into the French Army in 1658, and the Grand Duke Victor Amadeus of Savoy followed his example in 1681, clothing the Piedmontese Army in blue, with facings of different colours for the different regiments. The regiment of Guards retained its former uniform, the button-holes and pocket-flaps of the coat and vest being trimmed with gold lace or yellow braid.

The same dress continued to be worn with but little alteration for more than a century, up to the time of the French Revolution. Coloured plates of all the different costumes of the regiment are given in Major Guerrini's book. The cocked hat altered its shape but slightly during the whole of the eighteenth century: it was edged with lace and bore a blue cockade. The grenadiers had bearskin caps with brass front-plate. The belts were changed from buff to white, and the lace and buttons from gold to silver. Grenadiers and cacciatori (*chasseurs*) were distinguished by lace of a Vandyke pattern. White waistcoats and kneebreeches were worn in summer, and "spatterdashes," or long gaiters, of white linen or black cloth, according to the season. The officers wore blue sashes tied round the waist, under the coat, with gold stripes in them varying in number according to the rank of the wearer.

In 1672 the Grand Duke Charles Emmanuel commenced an unjustifiable and, as it turned out, an unprofitable war against the neighbouring Republic of Genoa, and the Regiment of Guards took part in the campaign in the Ligurian Alps, being engaged in six battles or combats between June and October, when the brief war was terminated without advantage to either side.

In 1685 King Louis XIV. of France revoked the edict of Nantes, and banished all his Protestant subjects from his dominions; and he called on the Grand Duke Amadeus II. of Savoy, whom he regarded and treated as his vassal, to adopt the same intolerant policy. The Grand Duke was unwilling to comply, but he dared not quarrel with his overbearing neighbour, and the Piedmontese troops were ordered to co-operate with the French Army, under Marshal Catinat, in expelling the Waldenses from their native valleys.

The mountaineers defended themselves after their usual fashion, and many officers and soldiers of the Guards were killed or maimed by the rolling rocks, which served the Waldenses for artillery; but the odds were too heavy against the gallant mountaineers, and they were finally obliged to abandon their homes and seek an asylum in free Switzerland.

But *Le Grand Monarque* had sown the wind, and he was soon to reap the whirlwind. His ambition and his arrogance had alienated all his allies and roused a deep-seated feeling of resentment throughout Europe, and one of the first signs of the coming storm was the return of the Waldenses in arms to recover their deserted homes, instigated by the agents of the Protestant Powers and aided by many Huguenot refugees, conspicuous among whom was Marshal Schomberg, who afterwards commanded the British Army in Ireland, and was killed at the battle of the Boyne. The French King again called on the Piedmontese Army to support the troops of Marshal Catinat; but Victor Amadeus had secretly joined the coalition which was preparing against France, and he connived at the enterprise of the Waldenses. However, he dared not show his hand openly as yet, till he was assured of support from Spain and Austria; his troops, therefore, ostentatiously took the field against the Waldenses, but always failed somehow to locate their positions or to intercept their movements. The French complained bitterly of their lukewarm allies, and Louis soon divined how matters stood, and arrogantly ordered the Grand Duke to receive a French garrison into the citadel of Turin; the answer was a declaration of war.

Marshal Catinat at once transferred the field of his operations to Piedmont, and established his head-quarters within the Grand Duke's territories, that he might subsist his Army at the expense of the enemy. His command was insufficient for offensive operations, as the bulk and the flower of the French forces were already employed against King William in Flanders, and the Piedmontese had been reinforced by an Austrian and a Spanish contingent. Victor Amadeus' object was to free his dominions from the presence of the enemy, and he gave battle to the Marshal at Staffarda. The battle was long and bloody; the Piedmontese Guards repulsed the attacks of the French dragoon regiments of Languedoc and Montgomery, and a subsequent one made by the three battalions of the Cambresis regiment of infantry; but the left wing of the Grand Duke's Army being broken and turned, the whole had to fall back. The retreat was made in good order, covered by the Austrian cavalry under Prince Eugene. The defeat at Staffarda was considered by the Piedmontese almost as a victory, for they had held their ground for eight hours against the French Army, which was at that time looked upon as invincible. Since its victories over the Spaniards at Lens and Rocroy, it had succeeded to the position of *facile princeps* among the Armies of Europe, and its prestige stood as high as that of its successor, the Army of the Empire, did a hundred years later, till it was shattered at Blenheim by Marlborough and Eugene.

The spell laid upon European warfare by the engineers who defended Candia had not yet been broken by the genius of Marlborough, and for two years after the battle of Staffarda, the campaigns in Piedmont were confined to manoeuvring in a series of endless marches and counter-marches, threatening and relieving petty fortresses and ravaging the enemy's territory. Marshal Catinat maintained his hold on the Grand Duke's territory, while the allied troops made incursions into France, where they laid waste the frontier districts in revenge for the French devastation of the Palatinate.

In 1693, the fourth year of the war, the Grand Duke laid siege to Pinerolo: the outworks were carried after desperate fighting, in which the grenadiers of the Guard Regiment lost half their number

killed and wounded; the ramparts were hotly cannonaded and the town bombarded, when Catinat, having obtained reinforcements, advanced to its relief with 77 battalions, 48 squadrons, and 26 guns. "In a few days, Sire," he wrote to King Louis, "I hope, please God, to be able to give you good news"; and five days later he announced to the King his victory at La Marsaglia. The Grand Duke, who did not know of the reinforcements that had reached the Marshal, gave him battle with only 25,000 allied troops against 40,000 French. The Guard Regiment was in second line on the right wing, under the command of Prince Eugene, and suffered heavy loss in vain attempts to retrieve the fortune of the day. The Grand Duke abandoned the siege of Pinerolo and remained strictly on the defensive during the three remaining years of the war, while Catinat wasted the country at his pleasure. But the French King, hard pressed by more powerful enemies, concluded peace with the Grand Duke in 1696, and withdrew his armies from Piedmont, only stipulating that the country should be considered neutral and should not afford passage to the troops of Spain or Austria during the remainder of the war, which was soon after terminated by the Peace of Ryswick. But this peace proved but a hollow truce, and in 1701 the disputed succession to the Spanish Crown became the pretext for again lighting up the flames of war. This time Spain was the ally of France, and the Grand Duke of Savoy found himself between the devil and the deep sea in the shape of the French Army of Catinat and the Spanish Army which garrisoned Lombardy, and which prevented the Austrians from coming to his assistance. He therefore elected to take part in the war on the French side, and a Piedmontese contingent, including the Regiment of Guards, joined the Army of Catinat, which marched to reinforce the Spaniards in Lombardy. The Grand Duke was made commander-in-chief of the allied army, but the French marshals under him ignored his orders, and acted on instructions received direct from Louis XIV. It is therefore not surprising that the operations were unsuccessful. Prince Eugene, with an inferior army in point of numbers, held his own throughout the campaign, and at Chiari repulsed the attack of the allies. Next year he again gained the advantage in the battle of Luzzara. The Grand Duke's Regiment of Guards was closely engaged in both these battles. At the conclusion of each campaign we find the Grand Duke handing over a lump sum to the captain of each company to be expended in recruiting his command up to full strength, so as to be ready to take the field in April. And on one occasion the captain of the Grenadier company of the first battalion received three times as much as the others, in consideration of the heavy losses sustained at Castrezzato, in some affair of which no other record has come down to us. In the casualty lists of these campaigns we find the number of deaths from disease half as much again as the casualties in action, and the losses from desertion three times as many as those from all other sources put together.

Victor Amadeus was secretly watching for an opportunity to change sides and return to his old alliance with Austria and Great Britain, and in 1703 he only sent six battalions and nine squadrons to open the campaign with the Franco-Spanish Army of Marshal Vendôme, in Lombardy. By this time the French saw very well which way the cat was going to jump, and the Marshal, having assembled his army at San Benedetto, ordered a general parade. The Piedmontese troops found themselves surrounded by the French and

Spaniards, and were ordered to ground their arms. Resistance was useless in the face of the odds against them, and they were all made prisoners, including one battalion of the Guards, and were marched under an escort of French troops to Pavia. But Vendôme, with a hostile Savoy between him and France, was no longer able to hold his own against the Austrians, and fell back to the frontiers of Piedmont. Prince Eugene had gone off to join Marlborough on the Danube, but his successor, Count Stahremberg, advanced by forced marches to the assistance of the Grand Duke. So many of the Piedmontese soldiers escaped from their captivity in Pavia and rejoined their colours, that Vendôme had the remainder of them embarked for France. The second battalion of the Guards, which had been made prisoners at San Benedetto, was now re-formed with the men who had escaped from Pavia, and was made up to strength by the incorporation of 192 Irishmen in it; it is not stated whence these came, but it is very likely that they were some of James II.'s Irish soldiers, some thousands of whom had been sold or presented to the Emperor by King William III. A third battalion was also added to the Regiment of Guards, and this new battalion soon gained its first laurels in a dashing expedition made from Susa to harass the French invaders of Savoy. An army, under Marshal de Tessé, had been sent by the French King to invade Piedmont by way of Mont Cenis, and it had already occupied Savoy. The Piedmontese from Susa surprised the French post at Chiaromonte, killing 100 Frenchmen, capturing 60, and putting the rest to flight; but they were repulsed in a subsequent attack on Chambéry, which they found too strongly held. The French operations were only interrupted for a time, and they eventually laid siege to Susa, while Marshal Vendôme, on his side, with 57 battalions and 60 squadrons, laid siege to Vercelli, the garrison of which consisted of 13 battalions, including the 2nd and 3rd Battalions of the Guards, and 600 cavalry. Victor Amadeus, at the head of 24,000 of his own troops and of the Austrians; in vain endeavoured to interrupt the operations. Vendôme had enough troops to keep him at bay, and to push the siege at the same time. The town was furiously assaulted and defended, an officer of the Guards, the Cavaliere de Châtillon, throwing a grenade with his own hands during one of the assaults had both his hands blown off by its premature explosion.

After two months of incessant bombardment and assault, the French effected a lodgment on the ramparts, and the garrison capitulated with the honours of war, and were made prisoners and sent into France. Susa had also fallen, and the two French Armies united and besieged La Verrua, where the Grand Duke had formed an entrenched camp. The 1st Battalion of the Regiment of Guards formed part of the defenders of La Verrua, which made a most heroic resistance from the middle of October to the middle of April; but the French stuck to their guns, and pushed the siege all through the winter. They forced the Grand Duke's little army to retire to Chivasso, and finally the defenders of Verrua were constrained by famine to surrender the heap of ruins to which it had been reduced by bombardment and mines. All the three battalions of the Guards were now prisoners of war; but with the headquarters and some details that were left, with retired officers of the regiment re-called to service, and with Militiamen and recruits, the Grand Duke formed two new battalions. He had entrenched himself at Chivasso, whither Marshal

Vendôme followed him, after he had allowed his troops a brief repose after the fatigues of their winter's siege.

An attack on the Piedmontese camp was repulsed with great loss to the French; the two new battalions of Guards on this day charged a French column of infantry with the bayonet and routed it, the French leaving 140 men dead on the field. Vendôme then began to proceed to the attack by regular approaches, and after forty days of open trenches and much fighting the Grand Duke abandoned the camp and fell back on Turin, where the two new Guard battalions took over the barracks of the regiment. The French Army followed, and laid siege to the city; but thinking the season too far advanced to prosecute such a serious enterprise, they raised the siege and retired into winter quarters.

Victor Amadeus was now in desperate straits; Turin was almost the only part of his dominions that remained to him, and he had only 8,000 foot and 6,000 horse, part his own troops, and part Austrians, left to defend it. However, he did not lose heart, but occupied all the winter in putting the city into the best possible posture of defence. In May, 1706, the French Army appeared again before the walls. The splendid story of the five months' siege of Turin, the feats of arms of the besiegers and the besieged, the devotion of the Piedmontese sapper Micca, and the relief of the beleaguered city by the Imperialist Army of Prince Eugene, are eloquently narrated in detail in Major Guerrini's pages.

The defeated French Army fled to Susa, and the victors occupied the rest of the year in clearing Lombardy of its Spanish garrisons, the Regiment of Guards being employed in the siege and capture of Pizzighettone. Next year Prince Eugene led the Austro-Piedmontese Army to the invasion of Provence, but though his operations were aided by the Dutch and English fleets, he besieged Toulon in vain. But the French were obliged to call off their troops from the frontiers of Piedmont to defend Toulon, and the Grand Duke seized the opportunity to recover Susa and all the places which the enemy had so long occupied within his borders, but they still remained in Savoy. Their expulsion thence was the object of the campaign of the next year (1708); in which the regiment of Piedmontese Guards, which had taken a foremost part in the sieges of Turin and Toulon, again distinguished itself at the capture of Fenestrelle and at the combat of Cesena, where one of its Grenadier companies, along with two other Grenadier companies, one Austrian and the other Prussian, and some other troops to the aggregate of 400 men, resisted for two hours the attacks of 3,000 French soldiers, and finally retired in good order, leaving 150 of their number killed and wounded on the field. This incident gives one some idea of the composite character of these old Standing Armies, in which nationality counted for nothing, and the inspiring sentiment of the soldier was fidelity to his flag. For the four remaining years of the war, the operations were confined to the frontier, all the efforts of Victor Amadeus to bring matters to a crisis being foiled by the skill of the Duke of Berwick, who was charged with the duty of maintaining a strict defensive in this quarter, while the fortune of the war was being decided on the Rhine and in Flanders.

The Peace of Utrecht in 1713 stripped Spain of all her possessions in Italy. Austria gained Lombardy, Naples, and Sardinia, and the bold Grand Duke of Savoy, who, with his little principality, had borne the brunt of the battle, received as his recompense the island of

Sicily and the title of King. Our regiment now became a corps of Royal Guards, and its first battalion, 8 companies strong, accompanied its sovereign as his escort to Palermo, when he went to take possession of his new kingdom. The Sicilians, whose one political idea seems to have been hostility to the Government, whatever it might be, hailed his arrival and the departure of the Spaniards with acclamations; but when, six years later, a large Spanish fleet and Army arrived to recover the island, they went over to the invaders and aided them to assail the feeble Piedmontese garrisons. The ambitious Cardinal Alberoni cherished the vain dream of restoring the decaying power of Spain, and he sent a great armament to surprise the island of Sicily and restore it to the Spanish crown. The battalion of Guards had been left in the island by the King as a guard to the Viceroy, and it was employed in that duty at Syracuse, but detachments of it were at other places, and shared in the disasters of the brief campaign in which the Spaniards over-ran the island. A captain of the Guards named Marelli was commanding the garrison of Palermo in virtue of his Army rank of lieut.-colonel. He had signalised himself by his bravery in the French war, but he surrendered the citadel of Palermo after what was considered an insufficient defence. He and his men were embarked as prisoners on a Spanish ship, which was taken at sea by an English cruiser, and carried into Syracuse. The unlucky Marelli was brought before a court-martial by the Viceroy, was convicted of cowardice in surrendering to the enemy and was shot.

General Andorno, the colonel of the Guards, was in command of the garrison at Messina, and distinguished himself by a gallant defence; but the brief war was put an end to by the arrival of the Austrian Army of Naples to the assistance of the Piedmontese. They drove the Spaniards out of the island, and kept it for themselves! giving the King the island of Sardinia in exchange, which he was fain to accept, and change his title to that of King of Sardinia. The battalion of Guards was brought back to Italy with the rest of the Piedmontese troops.

Europe now enjoyed an unwonted interval of peace, and the Guards were condemned to an inglorious repose for thirteen long years.

In 1733, a disputed succession to the throne of Poland brought on another general European war. The rival candidates were the Elector Augustus of Saxony, son of Augustus the Strong, supported by Austria; and Stanislaus Leczniski, son-in-law of Louis XV., whose cause was espoused by France. Spain eagerly seized the opportunity of regaining her lost possessions in Italy, and took the side of France. Both combatants courted the alliance of Charles Emmanuel III., the King of Sardinia; but France and Spain gained him to their side by promising him the crown of Lombardy as the prize of victory, and appointing him généralissimo of their Armies in Italy. Accordingly, he took the field at the head of his Guards, and a mighty Army of Piedmontese, French, and Spaniards combined. It was observed at the siege of Pizzighettone, where the Grenadiers of the Guards marched shoulder to shoulder with Frenchmen to the assault of the outworks held by Germans, that twenty-five years before they had marched beside German allies to assail the same outworks defended by Frenchmen. After the capture of Pizzighettone, the victorious allies entered Milan, where they were received with joy by the citizens, while the Austrians retired into the castle. The inhabitants feasted and fêted

the invaders, while they were besieging the citadel; the first salvo from the breaching batteries gave the signal for the commencement of the dance at a grand ball, which the veteran Marshal Villars, now eighty years of age, opened by dancing a minuet with the Princess Trivulzio; and the wags of the camp said that the Marshal had given two balls at the same time, one to the aristocracy of Milan, and the other to its citadel. The officers divided their time between the trenches and the opera; but they were presently able to give their undivided attention to social pleasures, for the Castle soon surrendered. The Spaniards marched away to pursue their own plans for the re-conquest of Naples and Sicily, and when the campaign of 1734 opened, the Austrian Army, under Mercy, was more equal to its opponents. The two armies were manœuvring in the neighbourhood of Parma when the dangerous illness of his Queen re-called Charles Emmanuel to Turin; and Mercy, hearing of his absence, immediately attacked the allied Army. The Austrians had almost gained the day, when the situation was saved by the desperate resistance of a brigade composed of thirty-six companies of Grenadiers, of which seven were Piedmontese, including one of the Guards. The Regiment of Picardy, the *doyen* of the French Army, shared the glory of the stand made by the Grenadiers. The fall of Mercy, killed by a cannon-shot, put a further check to the Austrian success, and both Armies bivouacked on the field of battle; but the Austrians, disengaged by the death of their general, withdrew during the night, and it was only the dawn that apprised the allies of their victory. Charles Emmanuel hurried back to rejoin his Army and improve the success. He followed up the retreating Austrian Army, and encamped with his Guards on the field of San Benedetto, where thirty years before they had been disarmed by their French allies, and which was now again to prove disastrous to them. Konigseck, who had succeeded Mercy in command of the Austrian Army, observing the slack watch kept by the French, surprised their camp, and drove them before him in confusion; Marshal Broglie escaping in his nightshirt. The Piedmontese Guards, in trying to cover the flight of the French, lost 10 officers and 325 men, cut off and captured by the enemy. The whole Army rallied under the protection of the guns of the fortress of Guastalla. Konigseck, elated by his success, attacked them there, and a battle was fought, which ended in the repulse of the Austrians with the loss of 9,000 killed and wounded; the allies lost 6,000.

The next year, 1735, the Spaniards rejoined from their conquest of Naples, and the Austrians, hopelessly outnumbered, were forced back from point to point till they were driven into the Tyrol. But the French were now tired of the war, from which they could gain nothing, as Augustus of Saxony was firmly seated on the throne of Poland; they therefore made peace with Austria over the head of Charles Emmanuel, who got nothing for his pains, while Naples and Sicily were made into a kingdom for a Spanish Royal prince.

When the war of the Austrian succession broke out a few years afterwards, the French had reason to repent of their scurvy treatment of King Charles Emmanuel III.; he, with King George II., of Great Britain, were the only allies who ranged themselves on the side of the Empress-Queen Maria Theresa against France, Spain, Prussia, Bavaria, and Naples.

A large Spanish Army was landed in Italy to gain back Lombardy, and was joined by the Neapolitan forces. To oppose them, the

Austrians had only 17 battalions and 9 squadrons, but Charles Emmanuel led to their aid his own Army of 24 battalions and 24 squadrons, and the Empress-Queen invested him with the supreme command. He had the double task of defending her possessions in Italy against the Spaniards and Neapolitans advancing from the south, and of safeguarding his own frontiers in the west, and he hurried from one scene of action to the other, taking his Regiment of Guards with him. They called it a *Guerra di gambe*, or "war of legs." But the Spanish generals were a feeble folk, and the inferiority of their soldiers counterbalanced their superiority in numbers. The Spanish Army that two centuries before had been the first in Europe was now the last.

In 1743, a combined Army of 30,000 French and Spaniards attempted the conquest of Savoy, to whom the King could only oppose 15,000; but his native mountains helped him, and the invaders, caught as in a trap in the gorges near Casteldelfino, were routed with great slaughter, and with the loss of 12 guns. The Guards did yeoman service that day. In 1744 the attempt was renewed, and the invaders forced a passage at Pietralunga at a fearful cost; but they were repulsed again from the fortress of Cuneo. But next year they changed their plan of campaign, and invaded Piedmont by way of the Riviera; the Genoese aided them, and a Spanish Army came up from the south to join hands with them. The King could not make head against their superiority of numbers, and could only delay their operations by harassing them, while they occupied his towns and slowly made their way towards Turin. By the end of the year, half of Piedmont was in their possession, when, as usual, both Armies went into winter quarters. But in 1746 the aspect of affairs entirely changed. King Frederick of Prussia had concluded a peace with the Empress Maria Theresa, and 30,000 Austrian troops were marched from Silesia into Italy. The tide of war was completely turned, and the King chased the invaders by the way they had come along the Riviera, and followed them into France, while the Austrians drove the Spaniards southwards as far as Piacenza. In 1747, the King wanted the Austrians to join him against the French, who were the most formidable of all the enemies, while they preferred to employ the bulk of their forces in the reduction of Genoa. One battalion of the Guards was with the King, the other joined the Austrians in the siege. The French, in order to effect a diversion in favour of their useful but feeble ally, sent one Army to invade the Italian Riviera, and another to occupy Savoy. The King hastened to oppose the latter, and to make head against the combined attacks he re-called all his Piedmontese troops from the Austrian camp before Genoa. The 2nd Battalion of the Guards then rejoined the 1st Battalion in the entrenched camp at Assietta in Savoy, where the King had assembled 8,000 men. Here they were attacked by 20,000 French under Lieut-General de Belleisle, who had sworn to gain the marshal's bâton that day, or perish in the attempt. The Piedmontese position proved impregnable, and Belleisle, seeing his men driven back time after time with heavy loss, himself seized a colour and led them in person to a fresh assault, and he had actually planted his flag on the enemy's breastwork when a soldier of the Piedmontese Guards shot him dead, and that attack was repulsed like the others. In spite of the fall of their leader the French renewed their fruitless efforts with unavailing gallantry till nightfall, when they fell back to their camp,

leaving 5,000 killed and wounded round the enemy's works. The loss of the Piedmontese was less than 300!

The French Army then fell back across the frontier, and the King hurried off to defend the Riviera, where the enemy had already occupied Nice. To reward the Regiment of Guards for their conspicuous services at Assietta, the King granted a gratuity of one month's pay to all ranks.

This was the last serious action in the war of the Austrian succession, which was terminated the following year by the peace of Aix-la-Chapelle. Charles Emmanuel received as his recompense some towns and territory taken from the Republic of Genoa. After the war, Spain made no further attempts to recover her lost supremacy in Italy, and the latter country enjoyed an unwonted and unbroken period of peace and tranquillity for more than forty years.

The Kings of Savoy, during this long peace, did not neglect the arts of war, and were constantly busy in increasing and improving the efficiency of their Army. In 1751, two light field guns, with a detachment of 25 sub-officers and men to serve them, were given to each battalion of the Guards. The gunners wore the regimental uniform, but with blue knee breeches and waistcoats instead of scarlet. The battalion guns continued to be employed by the Piedmontese infantry up to the end of the century.

The attack and defence of fortified places had ceased to be the principal object of strategy, and the special siege equipment of the Grenadiers was now discontinued; their hatchets were taken away from them, and given to a squad of pioneers, which was formed in each regiment of infantry; this is probably the reason why the pioneers of European Armies continued to wear the peculiar dress of grenadiers for more than a century. The grenades were also laid aside, or made over to the engineer corps.

The ingenious Mr. Brydon, in his letters from Sicily and Malta, written to William Beckford, Esq., in 1770, describes the review of a Swiss regiment in the service of Naples which he witnessed at Palermo that year. After observing that the parade movements were performed with a steadiness and precision only to be equalled by British or German troops, he goes on to say:—"The Grenadiers were furnished with false grenades, which produced every effect of real ones, except that of doing mischief. The throwing of these was the part of the entertainment that seemed to please the most; and the Grenadiers took care to direct them so that their effect should not be lost. When a number of them fell together among a thick crowd of the nobility, which was commonly the case, it afforded an entertaining scene enough, for they defended themselves with their hats, and threw them very dexterously upon their neighbours. However, we saw no damage done, except the singeing of a few wigs and caps; for the ladies were there in as great numbers as the gentlemen." From this passage it appears plain that grenades continued to form part of the armament of grenadier companies in some at least of the Armies of Europe as late as the year 1770.

The highest unit of organisation in the Piedmontese Army in peace-time was the regiment. At the commencement of a war or campaign the regiments were assembled in brigades, as was the custom in all the other Armies at that time, and as is still the case in our British Army to-day. These provisional brigades were formed of three or four regiments, and were not designated by a numerical title,

but took their name from the senior regiment composing them; as the Guards' Brigade, the Savoy Brigade, the Piedmont Brigade, etc. But in 1774 King Victor Amadeus III. entirely re-organised his Army, forming all his infantry regiments, native and foreign, into four permanent brigades for peace and war. Each brigade had four regiments; the 1st Brigade comprised the Guards, the Regiment of Piedmont, the German Regiment Royal Allemand, and the Swiss Regiment of Berne. The regiments had hitherto had two battalions of ten companies each. The King now re-organised them in three battalions of four companies each, with two extra grenadier companies, which were attached to the second and third battalions, as these were on the flanks in line, and in front and rear of the column. The brigade thus consisted of 12 battalions, and corresponded to our present infantry divisions. The Militia were similarly organised to form a second line to the Regular Army. Each brigade was commanded by a major-general, or by a colonel with the rank of brigadier-general. To compensate the officers for the loss of company commands, as the number of companies in each regiment had been reduced from twenty to fourteen, the number of field officers was increased from three to seven. Each battalion was commanded by a major, each double company by a first captain, and each company by a second captain. The evident evils of this organisation were the infinite subdivision of authority, and the undue lengthening and, therefore, weakening of the chain of command and responsibility; and though theoretically perfect on paper, it did not work well or smoothly. In 1786 a new re-organisation took place. The regiments were again formed in two battalions, and the number of companies reduced from fourteen to twelve. Each battalion had four companies of Fusiliers and one of Grenadiers; a light infantry company of Cacciatori or Chasseurs was for the first time attached to each regiment, and also a dépôt company. On mobilisation, the light companies were detached from their regiments and formed into provisional battalions of light troops.

Desertion was rife in the Piedmontese, as in other Armies of the time; and as the right of sanctuary still existed in the churches there, the deserters took refuge in them, and waited their opportunity to escape altogether.

The Kings for long had negotiated with the Popes with a view to putting a stop to this state of things, but the heads of the Church were very tenacious of its privileges. At last, in 1776, the Pope was prevailed on to consent to sanctuary being denied to deserters from the Army. However, as the right was still retained for offenders guilty of other crimes, the concession only made matters worse; for the soldier who wanted to desert committed some other crime in order to qualify for the right of sanctuary. Finally, in 1779, the King prevailed upon the Pope to refuse the right of sanctuary altogether to soldiers.

But a storm was rising that was soon to sweep away the authority of both Pope and King, and the old social and political systems of Europe were soon to crumble under the shock of the French Revolution. The Piedmontese Army was rusty from forty-four years of continuous peace, its generals and colonels were superannuated, the King was feeble and unwarlike. Before the Austrians could arrive to his assistance, Savoy was overrun by the Republican Armies.

The 1st Battalion of the Guards took part in the brief and disastrous campaign. For the next, all the grenadiers and chasseurs of the Army were formed into provisional battalions; the two grenadier companies of the Guards were joined with those of the regiments Asti and Casale in a battalion of six companies; the Guards' chasseur company formed a battalion with seven chasseur companies of the Line. Thus the Guards' Regiment was split into three different bodies, often employed on distant theatres of operations. The grenadier and chasseur companies were embarked at Oneglia for Toulon, the gates of which had been opened by the French Royalists to the English seamen and marines, and a motley garrison of British, Spanish, Piedmontese, and Neapolitan troops were thrown into the city for its defence. Here the Piedmontese Guards fought shoulder to shoulder with English soldiers in several gallant sorties and assaults, and were highly complimented by Lord Mulgrave for their bravery. Here, also, they first encountered their future conqueror, Napoleon Buonaparte. They were the last troops to evacuate Toulon when the unfortunate city was abandoned to Republican vengeance. Meanwhile, the war in the Riviera was carried on, languidly by the Austrian generals, and vigorously by the French under the leadership of Masséna; but without any decisive result, until the conclusion of peace between Spain and France set the Army of the Pyrenees free to reinforce the Army of Italy, of which at the same time Buonaparte assumed the command. In one decisive campaign, he finished the war, which had been dragging on for four years, so far as Piedmont was concerned. General Colli and his Army laid down their arms, the King took refuge in the Island of Sardinia, and the Cisalpine Republic was proclaimed in Turin.

The Piedmontese troops were incorporated in the French Army under the Tricolour flag. All the regiments were broken up and reformed in three demi-brigades, numbered, 1st, 2nd, and 3rd Piedmontese. Some of the Guards followed the King to Sardinia, others went off home, the rest were incorporated in the new formations. The French had a special spite against the regiment on account of its aristocratic character, and its loyalty to the monarchy, and General Grouchy, who was charged with the re-organisation of the Piedmontese Army, incorporated the Guards with a regiment of pioneers and a newly-raised regiment of light infantry, neither of which corps bore a high reputation. The new corps was numbered the 1st Piedmontese Demi-Brigade, and under the French flag it earned many laurels during a brief but glorious career.

In 1799, while Napoleon was absent in Egypt, Field-Marshal Suvaroff, at the head of an Austro-Russian Army, swept the French generals from the face of Italy and entered Turin in triumph. He proclaimed the restoration of the King, and the re-establishment of the Royal Piedmontese Army, and made a commencement by forming two companies of Guards with old officers and soldiers of the regiment who were on the spot. After he left, the Austrian General Melas continued the re-constitution, and had already formed one battalion of each of the four senior regiments, viz., the Guards, Savoy, Montferrato, and Piedmont, when Marengo totally changed the situation: the Austrians were again driven from Italy, the French were triumphant, the Piedmontese regiments were again dissolved.

Soon afterwards, the whole of Northern Italy was united in one kingdom, with Napoleon's step-son, Eugene Beauharnais, as Viceroy;

and eventually the Papal States were subjected to his government, while the kingdom of Naples was ruled by Napoleon's brother-in-law, Joachim Murat, so that the whole country was under French rule.

There is no doubt that under this *régime* Italy was better governed, and her people enjoyed more liberty than had been the case since the days of the Roman Empire; and the French rule sowed the seeds of national unity which later bore such abundant fruit. The Tricolour became a symbol of liberty and unity to the Italian people, and later on they adopted it unanimously as their national flag.

But for a time all things went back into the old groove, and it was as if the French Revolution had never been. In 1814, the empire of Napoleon was tottering to its fall, and the British Government signed a convention with the King of Sardinia for the formation of a Royal Piedmontese Legion of 3,000 men, the ranks of which were entirely filled by Piedmontese prisoners of war taken from the French by the British in the Peninsula and elsewhere.

On the 29th May that year, King Victor Emmanuel I. entered Turin, which had been for some time in possession of the Austrians. They were not at all anxious for his return, having views of their own as to the disposal of his dominions, but the British Cabinet insisted upon his restoration to the full rights and possessions of the House of Savoy. He immediately ordained the re-constitution of the Royal Piedmontese Army on the old basis. The Régiment of Guards was to be reformed in two battalions of six companies each: one of grenadier, one of chasseurs, and four of fusiliers. The conscription established by the French was discontinued, and the regiment was to be recruited by voluntary enlistment, as of old. On the 23rd November the new colours of the regiment were solemnly consecrated by Cardinal Solaro in the church of San Carlo at Turin. But recruits came in but slowly, and when Napoleon suddenly returned from Elba in the spring of 1815 the 2nd Battalion of the Guards had to be incorporated with the 1st to form a single field battalion. It was arranged that 15,000 Piedmontese were to co-operate with 85,000 Austrians invading France through Savoy; but Waterloo had already been fought and won before they had commenced operations. The French at first assumed the offensive and drove the Piedmontese back beyond the frontiers; but when the Austrians came up the tables were turned, and the French were in their turn driven back to Lyons and beyond. The Piedmontese Guards took part in the assault on Grenoble, and garrisoned the town after its capture. When the brief campaign was over, the regiment returned to its quarters in Turin.

Meanwhile it had become evident that the old methods of Army administration were no longer applicable to altered conditions, and it was useless to try to tread the old paths. Victor Emmanuel I. found himself obliged to have recourse to the French method of conscription to fill the ranks, and he, moreover, adopted the Prussian system of short service and a Reserve. Voluntary enlistment was still encouraged, but the cadres were filled up with conscripts. The liability to serve lasted for eight years, but the men were dismissed on perpetual furlough as soon as trained, while their places in the ranks were taken by a fresh batch of conscripts. The old national Militia force was abolished, and all its men were made liable to service in the Regular Army. On mobilisation, each company, battalion, or other unit, was divided into two, the cadres being then filled up from the Reserves. Each regiment on the peace establishment thus formed

a brigade of two regiments on the war establishment; the strength of the Army was doubled on mobilisation, and the old Regiment of Guards became the Brigade of Grenadier Guards.

The King was naturally desirous of filling the ranks of his Guards with the tallest and finest men in the Army; he therefore ordered that the Reserve of the Guards' Regiment should be formed in the first instance from the grenadier companies of the dissolved Militia regiments. These soldiers, though they were proud to serve in the Royal Guards, were equally proud of being grenadiers, and protested against being drafted into fusilier companies.¹ The King was pleased with their military pride, and, to satisfy it, ordered that the Regiment of Guards should be made a grenadier corps. All its companies thenceforth assumed the bearskin cap and the dress and equipment of grenadiers.

This feeling of military pride engendered by belonging to a picked body of men was strikingly illustrated in an occurrence that had happened fifty years before in the Army commanded by Sir Hector Monro in India. Some native grenadiers were among a batch of Bengal sepoys sentenced to be blown from guns for the crime of mutiny. While they were being tied to the guns, they addressed the officer who was superintending the execution, begging that, as they were grenadiers, and entitled to take the right of the line, they might be attached to the guns on the right of the battery. Their request was granted, and from their proud position as grenadiers on the right of the line they were blown into eternity.

The uniform of the Regiment of Grenadier Guards was now a bearskin cap, with brass front-plate, and white cords and tassels, and a blue and white hackle feather at the left side; a blue coatee with red collar, cuffs and shoulder-straps, the breast braided with broad brandebourgs of white braid; white serge knee-breeches, and long black cloth spatterdashes. The lace and buttons were silver; the accoutrements were white cross-belts with brass breast-plate; the arms were musket and bayonet, and sabre.

There was now another regiment of foot guards called the Cacciatori Guardie, or Chasseurs of the Guard. This was originally the Regiment of Sardinia, raised for the war of the Austrian succession in 1744 by the Duke of San Pietro, and recruited from the Islands of Sardinia and Corsica; its dépôt was always kept in the Island of Sardinia, and one of its battalions was generally in garrison there. Its uniform was white with black velvet facings and gold lace and buttons. During the disastrous war against the French Republic, the Regiment of Sardinia was associated with the Regiment of Guards in the successful defence of the Col d'Anthion. It escaped the fate which overtook the rest of the Piedmontese Army in 1798, owing to its being quartered in the Island of Sardinia, where it acted

¹ The term "fusilier" was used in the Piedmontese, as in the French Army, to signify an ordinary soldier of the battalion companies, not of the grenadiers or chasseurs. In Germany it meant light infantry; and in England it was synonymous with grenadier, the regiments in which all the companies were equipped and dressed as grenadiers being called fusilier regiments. The fusil in France and Piedmont signified the ordinary flint-lock musket; in English it meant a lighter and shorter fire-lock such as was carried by the officers and sergeants of grenadier companies, and latterly by some light infantry regiments.

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as a guard to the exiled King, and therefore King Victor Emmanuel I., on his return to Turin, made it a Guard Corps, under the title of Cacciatori Guardie. It continued to have its dépôt in Sardinia, and as the conscription had not been extended to the island, it was still recruited by voluntary enlistment, and was incapable of expansion on mobilisation; it was, however, brigaded with the Grenadier Guards, and was finally incorporated with them in 1860, transferring to them its old territorial title.

The Italians had not forgotten the large measure of individual liberty which they had enjoyed under French rule, and in 1820 an agitation for constitutional government was commenced throughout the peninsula. In Piedmont the movement infected the Army, and in 1821 matters came to a crisis between the King and the party of reform. The Regiments of Guards, both Grenadiers and Chasseurs, stood loyal to their Royal master; and three companies of the former were introduced into the citadel of Turin to overawe the garrison, consisting of artillery, engineers, and a battalion of the Line, who were suspected of favouring the Liberal cause. But by a clever piece of treachery the arms of these three companies were sent to the armourer to be stripped, on the very day that the other troops in the citadel mutinied. Some of the non-commissioned officers of the Guards were certainly implicated in the conspiracy, and it was one of their sergeants who slew with his sabre the fort major and a colonel of artillery who attempted to suppress the mutiny. Matters came to such a pass that the Royalists evacuated Turin, and the King abdicated in favour of his brother Charles Felix, who established himself at Novara, where the Guards rallied round him; but the trouble was ended in the usual way by the intervention of an Austrian Army, which put down the constitutional movement and re-established the old state of things.

Charles Felix appointed as his Minister of War the Marquis Philip Paolucci, of Modena, who had been an officer in the Guards during the war against the French Republic, and after the capitulation of the Piedmontese Army had sought his fortune in foreign lands, as did most of his brother officers. He entered the service of Russia and rose to high command; he was at one time Governor of Riga, and commanded a Russian Army which opposed the left wing of *La Grande Armée* under Marshal Macdonald in 1812. He now returned to give the benefit of his talents and experience to his native land, and he applied himself to the task of augmenting the strength and expanding the resources of the Piedmontese Army. In 1830, the King, Charles Felix, died childless, and was succeeded by a distant cousin, Charles Albert, Prince of Carignan, of a collateral branch of the House of Savoy, descended from a son of Emmanuel Philibert, the victor of St. Quentin. He inherited the military instincts of his ancestors, and, moreover, he adopted a liberal policy, and put himself at the head of the Italian national movement, which was destined to raise his dynasty to the throne of a united Italy, and to make their kingdom into a great Power in Europe. He extended the period of service with the colours to two continuous years, and the period of liability to military service from eight to sixteen years, of which half were to be passed in the Active Army and its Reserve, and half in the Militia or Territorial Reserve. He established the cadre of a dépôt battalion in each regiment, which was destined to train the recruits, and to feed the field battalions in time of war. He also commenced the custom of

assembling the troops in masses for the practice of manœuvres on a large scale. On his accession some changes were made in the dress of the Army.

The Grenadier Guards now wore a bearskin cap with a gilt grenade in front, and red cords round it with tassels hanging down to their shoulders, without any plume. The white brandebourgs were taken off the coatee, but red woollen wings were added to it. Grey trousers were worn instead of kneebreeches and gaiters. The drum-major and musicians wore huge busbies with blue and white plumes, and red and white busby-bags, blue coatees, richly laced with silver, and crimson trousers with silver stripes. The cymbal players were negroes, dressed in fantastic Turkish costumes. Ten years later the blue coatee was changed to a double-breasted tunic, and the crossbelts were laid aside with the sabre and bayonet that they carried, for a white waist-belt with a sword bayonet.

In 1836, Captain Alessandro Lamarmora, of the Grenadier Guards, formed the first corps of Bersaglieri in the Piedmontese Army, and a sergeant of the Guards, Giuseppe Vayra, was the first man who appeared in the uniform of the new corps for the approval of the King.

In 1838 the colours of the regiment, which had been consecrated by Cardinal Solaro in 1814, being worn out, Her Majesty the Queen Consort, Maria Theresa, embroidered with her own hands new colours for the Grenadier Guards, and these were solemnly consecrated by the Cardinal Archbishop Tudini, at Genoa, where the regiment was then stationed. These were the last blue colours of Savoy borne by the alieri, or ensigns, of the Grenadiers, for in 1848 they were laid aside for the Italian Tricolour, hoisted by King Charles Albert as the signal for all Italians to unite in driving the Austrian foreigner from Italian soil. It is worthy of notice that to every people over whom the French Tricolour had once floated, it served thereafter as the symbol of liberty.

For this campaign, the Brigade of Guards was formed in two mixed regiments; the two battalions of the Grenadiers having become four on mobilisation; the 1st Guards' Regiment was composed of the 1st and 3rd Battalions of Grenadiers and the 1st Battalion of Chasseurs; the second regiment included the 2nd and 4th Battalions Grenadiers, and the 2nd Battalion of Chasseurs. This formation was not satisfactory to the Chasseurs, who complained that the identity of their regiment was lost, by being merged in that of the Grenadiers. As the war went on, Reserve battalions were formed for all the regiments from the men of the Second Reserve, and some of these Reserve battalions were afterwards united to form a third regiment of Guards. After the conclusion of the war, the new regiment was dissolved by the dismissal of the Reserve men to their homes.

The Guards were several times hotly engaged in the brilliant opening of the campaign of 1848; at the combat of St. Lucia they crossed bayonets with and broke a battalion of Italian Grenadiers in the Austrian ranks; at Goito, when the Piedmontese line was broken by the impetuous assault of the enemy, young Victor Emmanuel led the Guards forward to retrieve the day, crying: "Ame le Guardie, per l'onore di Casa Savoia!" At Custozza they captured an Austrian colour, which may now be seen in the Royal Armoury at Turin.

But the King's advance was checked by the fortresses of the Quadrilateral, behind which the old veteran, Field-Marshal Radetsky, awaited his reinforcements; and by the time Peschiera had surrendered, the Austrian Army advanced with superior numbers from

Mantua and Verona. Charles Albert was out-generalled by Radetsky, his Army was outnumbered, the wave of popular enthusiasm was spent, the inevitable re-action set in. The Piedmontese Army fell back through Lombardy as rapidly as it had advanced, and in the next campaign it was reduced to defending its own frontiers against the Austrian invasion. At Novara the Guards were in reserve, and the Grenadiers fired no shot that fatal day; but the Chasseurs were sent forward in a vain attempt to retrieve the lost fight, and suffered heavily. That same night Charles Albert abdicated in favour of his son Victor Emmanuel; King Ferdinand of Naples had quelled the revolution there with the aid of his four regiments of Swiss; the French had sent an Army to replace the fugitive Pope on his throne; and all things went on as before in Italy for ten years more.

But in 1850 the Piedmontese Minister of War announced that the maintenance of ancient prerogatives and exceptional privileges was incompatible with modern political ideals and with the democratic spirit of the age, and that therefore the distinction between Guards and Line was annulled, and the exclusive privileges of the former abrogated. At the same time, along with other military reforms, the numbers of battalions in each regiment of infantry was increased from two to three. The Brigade of Guards of two regiments of Grenadiers and one of Chasseurs of two battalions each was therefore now re-formed in two three-battalion regiments with the title of Brigade of 1st and 2nd Regiments of Grenadiers of Sardinia, and this title and formation it has retained to this day.

In 1855 King Victor Emmanuel threw in his lot with the allies against Russia, and sent a Piedmontese Army to the Crimea. One battalion was drawn from each of the twenty infantry regiments of the Army, with five battalions of Bersaglieri and ten batteries of field artillery. The force was organised in 2 divisions of 2 brigades each, and a reserve brigade, each brigade consisting of 4 battalions of the Line, 1 battalion of Bersaglieri, and 2 batteries. The two battalions of the Grenadiers of Sardinia were brigaded with two battalions of Savoy and the 1st Battalion of Bersagliere and the 1st and 4th Field Batteries, and formed the Reserve Brigade. In that capacity they were present at the battle of the Chernaya, but the Russians were repulsed without their services being called into requisition; however, on their return to Turin, General Cialdini promised them that they should soon be consoled for their disappointment.

And accordingly, in 1859, the Grenadiers gloriously celebrated on the field of battle the 200th anniversary of their regimental formation as the Regiment of Guards of the Grand Duke of Savoy in 1659. King Victor Emmanuel resumed the enterprise of his father, declaring that his sole ambition was to be the first soldier in the army of a united Italy; and the French and Piedmontese troops were once more allied against the Austrians in Lombardy. At Magenta the Grenadiers were in reserve, and the hasty retreat of the enemy gave them no opportunity of joining in the battle; but at Solferino they had a full share in the unsuccessful attack of the Piedmontese Army upon Benedek's corps, strongly posted on the heights of San Martino.

The next year was the *Anno Glorioso* of the accomplishment of Italian unity. Garibaldi and his thousand had landed at Marsala, and had pursued their victorious career till they were face to face with the Bourbon Neapolitan Army on the Volturno. The Pope had raised an army of 20,000 mercenaries and volunteers from all the

Catholic countries of Christendom—Swiss, French, Austrians, Belgians, and Irish—and it was proposed to send it to the help of the King of Naples. Victor Emmanuel and his Minister, Cavour, made this a pretext for invading the Papal States, and the Army of the Church had to face northwards to meet the new foe. In this campaign the Brigade of Grenadiers formed part of the army corps commanded by General della Rocca. They carried the ramparts of Perugia by storm, and received from the King two silver medals with suitable inscriptions to be suspended by blue ribbons from the spear-heads of the colours of the two regiments, to commemorate their valour on this occasion. As the stormers were entering the town, the drum-major of the 2nd Regiment was killed by a shot fired by a priest from the window of his house. The priest was tried by drum-head court-martial, and though there appeared to be some doubt whether he himself had actually fired the fatal shot, he was not given the benefit of the doubt, but was shot the next day.

The Brigade was next employed at the siege of Ancona, in which fortress General Lamorcière and the remnant of the Papal forces had taken refuge after their disastrous defeat at Castelfidardo. The Grenadiers were among the troops who carried the outworks by a vigorous assault, which led to the surrender of the town. From Ancona they proceeded by forced marches to the assistance of the Garibaldians on the Volturno, who could not advance in face of the numbers opposed to them; but on the arrival of the Piedmontese Army the Neapolitan troops evacuated the line of the Volturno and fell back under the guns of Gaeta. Here the advanced brigades of the Piedmontese attacked them without waiting for their main body to come up, and won a brilliant victory at Mola di Gaeta. The Brigade of Grenadiers again signalled itself by its valour on this occasion, and its colours were again decorated by the King: those of the 1st Regiment with a gold medal, and those of the 2nd Regiment with a silver one.

The Piedmontese Army now became the nucleus of the Italian National Army, and the Grenadiers of Sardinia furnished large drafts to form the new brigades of Grenadiers of Lombardy, of Tuscany, and of Naples.

In 1866 the Italians were again upon the war-path, this time to redeem Venice from the power of Austria. The King of Prussia had attacked the Kaiser, and the head of the House of Savoy, with the political astuteness of his race, seized the opportunity to advance the interests of his country. The Italian Army crossed the Mincio, and the Brigade of Grenadiers was hotly engaged all through the disastrous day of Custozza, under the burning sun of an Italian June and the murderous fire of the Austrian artillery. They lost that day 15 officers and 80 men killed, 21 officers and 300 men wounded, and 2 officers and 300 men made prisoners. Three of their officers received gold medals for feats of conspicuous valour done that day.

In 1871, among other changes in the organisation of the Army, mostly prompted by an unavoidable necessity for economy, the designation of Grenadiers was suppressed for the Brigades of Lombardy, Tuscany and Naples, and their regiments were converted into regiments of the Line. The Grenadiers of Sardinia, however, were permitted to retain their old distinction, but all the differences of dress and equipment which had hitherto distinguished the Grenadier corps were abolished; the only difference between their dress and that

of other regiments of infantry now is, that they have a grenade ornament on the "cheppi" or shako, and instead of the red piping of the other regiments, their tunics have scarlet collars and cuffs with a loop of silver lace or white braid on the collar.

The Duke of San Pietro who had raised and commanded the regiment of Sardinia, which afterwards became the regiment of Cacciatori Guardie, left by his will the sum of 100,000 Piedmontese lire to the regiment, the annual interest of which, amounting to about 4,000 lire was to be expended in the maintenance of the band, in dressing the drum-major, in regimental charities, and in the performance of an anniversary service to commemorate the testator. When the Chasseurs of the Guard Regiment were amalgamated with the Brigade of Grenadiers, they brought this bequest with them, and its benefits are still enjoyed by the Grenadiers of Sardinia.

The Brigade is now quartered in Rome where they have a military museum in their barracks containing many objects of interest connected with the life and history of the regiments which compose it; old stands of colours and old arms, uniforms, and badges; pictures illustrating battle scenes in which the regiments took part, and costumes formerly worn; portraits of all the colonels and of many other officers, including four who served as Volunteers in the late Abyssinian campaign, and were killed at Adowa; the cap of an officer pierced by an Austrian bullet; the sword of an Austrian officer killed in single combat by an officer of the Grenadiers; and many other relics and trophies too numerous to mention. There is a marble statue representing a Grenadier throwing his grenade, and the sword-knot of the late King Humbert, presented as a memento to the brigade by his present Majesty, is kept enclosed in a handsome casket as a precious relic of the beloved and lamented monarch.

The 1st and 2nd Regiments of Grenadiers of Sardinia each consists of three battalions of four companies each, and a regimental dépôt company, which is expanded into a dépôt battalion on mobilisation. The strength of each regiment on a peace footing is 60 officers and 1,200 men; on a war footing, 76 officers and 2,800 men.

The history of these ancient and noble regiments is the history of modern Italy; since their first formation in 1659, there has hardly been a war waged or an expedition undertaken in the peninsula but they have played a conspicuous part in it, and they have now been fortunate in finding in Major Domenico Guerrini an historian worthy of their renown. Italy has now enjoyed a long interval of peace; but whoever has seen these fine regiments of Grenadiers of Sardinia on parade or on the march must be convinced that the Italian sword has not rusted in its scabbard.

That they may long continue to wear the laurels gathered on so many fields of battle, and that they may in the future abundantly add to them from fresh fields of fame, must be the prayer of every soldier in Europe.

THE CHINESE ARMY.

By General H. N. FREY, late Commanding the 1st Brigade of the French Expeditionary Force in China.

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This Article is one of a series from General Frey's new work, "L'Armée Chinoise Ancienne, Nouvelle et dans l'Avenir," which the Author has kindly given us permission to reproduce in the JOURNAL.

NO one who watched the Chinese Army during the last campaign in Pechili, more particularly during the operations round Tientsin, can deny that in its general organisation, its armament, the military training of its infantry and artillery, in one word, in all that goes to make up the efficiency of an army, it has made remarkable progress, when compared with the forces which the French and English contingents had to fight in 1860, and the Japanese in 1894. Moreover, if one can believe the reports of officers and others, who travelled in China before the breaking out of the Boxer movement, the Pechili troops, the only ones with which the Powers were brought face to face at Tientsin and Pekin, were not even those which had reached the highest state of discipline and military efficiency. This is certain, that at Tientsin, those of the Allied generals, who were in possession of the best information, viz., the Japanese and English, were particularly concerned at the moment of undertaking the march on Pekin, with the possibility that the International Army would meet *en route* the 8,000 men composing the army corps of Shantung, who had been drilled and disciplined, some years before, by Europeans at Siao-Tcheou, near Tientsin; it not being known whether Yuan-Shi-Khai, their commander, had taken them with him, when he was nominated to the Vice-royalty of that province. Fortunately the Viceroy had been obliged to retain his troops with him, in order to maintain order, as Shantung was one of the most disturbed provinces in the Empire, and owing also to its distance from the seat of war, only a small body of a thousand men, it was said, arrived late in the day to take part in the operations in Pechili. The impression produced on the minds of the officers of the different contingents of the International Expeditionary Force, who witnessed the manœuvres executed in the environs of the Chinese capital in the last months of 1901, as also by the appearance and real military knowledge of the 4,000 soldiers of these Shantung troops, who, under the orders of Yuan-Shi-Khai, formed the escort of the Imperial Court on its return to Pekin, tended to show that there was some foundation for the apprehensions of the Allied generals. Moreover, the promptitude and

the vigour with which the detachment of troops sent from Pekin by Yuan-Shi-Khai, in the summer of 1902, to disperse the Boxers in South Pechili, repressed a revolt which in everyone's eyes had assumed an alarming character, are additional proofs that this corps possesses a real military value.

It must be admitted that various causes prevented the Chinese Army in the campaign of 1900-01 from making as good a figure as the Allies were justified in expecting from it. There was the absence of any general plan of defence, even of the capital, or of the road from Tientsin to Pekin; the lack of any directing brain; the changeable disposition of the Chinese Court, one day friendly and the next hostile to the Legations at Pekin, and to foreigners generally; and finally the stringent order from Li-Hung-Chang to the Chinese generals, after the fall of the capital, to avoid all conflict with the International contingents, with the view of putting an end as soon as possible to a war which seemed to this high mandarin fatal to the true interests of China.

These numerous elements of disorganisation did not prevent the Chinese Army from giving proof on different occasions of real military qualities. Some writers, and notably the author of a work, which appeared in 1902, under the title of "The Battles of the German Expeditionary Force in China," go so far as to assert that in spite of the defeats of Taku and Tientsin, the prestige and patriotic sentiment, with which the Army was animated, did not definitely suffer in the eyes of the Chinese, in spite of the decision of their generals, after these actions, to refuse battle. But in justice to the generals we must admit that they achieved their object to a certain extent by never losing touch of the enemy.

The Pechili campaign will not have retarded for long the distinctly accentuated progressive movement for the re-organisation of the Chinese Army. One of its results will have been to furnish China with lessons of every kind, by which, with the aid of good counsellors, she will know how to profit; it would appear, moreover, to have acted as a stimulant to the reformers. As a matter of fact, the negotiations were scarcely terminated than one noticed the prodigious activity displayed by certain viceroys, notably by Yuan-Shi-Khai, the new viceroy of Pechili, and by Tcheng-Tchi-Tong, in the re-organisation of the military forces of their provinces. All the troops which form the nucleus of the Army are already instructed and drilled in the European manner; and being stationed at Pekin, Tientsin, Nankin, Foochow, in Shantung, Manchuria, and the two Kiangs, are thus more favourably placed for serving as models for the creation of new units, destined to form so many small armies distributed in the country, where they will be able to act more effectively, in the event of a new conflict between China and one or more of the Powers.

Under what conditions can the organisation of these forces be proceeded with, perfected, and satisfactorily completed? What are the best means for attaining this result? What will be, in the future, the value of these Armies?

I.

Let it be understood, once for all, that the principle of the necessity of the constitution of a powerful Army and Navy, organised, armed, and drilled on the model of, and after, the methods of European

Armies and Fleets, is not now disputed by any of those who wish to preserve the integrity, dignity, and independence of the Middle Kingdom. "For new times, new methods are necessary," proclaimed the Emperor Kouang-Tsu in the *Chuen-Hioh-Pien*. "We must defy," he said, "all these lovers of the old system of forming an ever-victorious army with the old armament; of protecting the coasts of China with obsolete gun-boats instead of modern battle-ships."¹

"The troops," he proclaims in this same *Chuen-Hioh-Pien* (the sole hope of China), "are to a country what breathing is to the body. No one can live without breathing—no country can exist without an army. And to-day we find in China some highly-placed personages who declare that the Middle Empire ought to join the League for disarmament, because the Empire finds itself in a desperate plight, and the action of this League will guarantee peace in the East."

The Emperor Kouang-Tsu further shows his contempt for those mandarins who, slavishly devoted to routine, are adverse to all reform, or perhaps we ought to say, who are discouraged from advancing along the path of progress by fear of the enormous expense which it might entail on the country. He also condemns the sectarians who, blinded by their anti-military spirit, are prepared to sacrifice the very existence of their country to their chimerical or criminal doctrines, denying the necessity of China creating for herself strong and costly armies, and demanding universal disarmament, preferring to rely on justice and international law for the settlement of difficulties, which may arise between China and other Powers.

"Our belief is," he continues, "that in place of giving peace to China, her disarmament would only bring about fresh insults from the other Powers. Rather ought we to be on our guard, now that all the Powers are speaking of disarmament! If we maintain our Army, the small nations will respect us, the great ones will fear us.

"Many among us have an absolute confidence in International Laws, but they are as stupid as those who trust in disarmament and universal peace! Between countries equally well-armed, International Laws may serve a purpose; but what can these Laws do to settle serious disputes between a strong and a weak nation?"²

This same affirmation of the absolute necessity of a powerful army, and this protest against the promoters of the idea of a disarmament of China, we find expressed in a no less energetic manner by Tcheng-Tchi-Tong, in an interview that this high mandarin gave to a French journalist at Ou-Tchang:—

¹ The great party of reform, represented by the famous Society, the Po-Wong-Woc, which numbers several millions of admirers, and whose immediate object is the "Safety of the Middle Empire," advocates, at the same time as the abolition of the old customs, the opening of the ports to commerce, etc., the construction or purchase, by means of capital obtained by voluntary subscriptions, of a war-fleet, and the raising of forces sufficient to maintain the integrity of Chinese territory.

² This is the same language M. Thiers used at the sitting of the Corps Législatif on the 20th June, 1870, on the occasion of a proposition by one of the Deputies for a reduction of the forces by 10,000 men:—"We are continually told: 'Disarm, and others will imitate you.' To speak of disarmament is to cherish a chimera. I am for peace. But to have peace it is necessary that we should be strong."

"When we have acquired the treasures of European science," said Tcheng-Tchi-Tong, "we shall have to guard them, and to guard them we must have an Army. It is proposed to-day, by some writers, who see the state of China becoming more and more critical, that we should join the European Disarmament Society. This project is of a nature to bring upon us yet more terrible humiliation. All the world speaks of peace, but nobody cares to keep it. Germany has taken possession of Kiau-Tcheou by force of arms, Russia of Port Arthur. For the last twenty years nations have been vying with each other in incurring fresh expenditure for the increase of their naval and military forces. If we have a strong Army, powerful countries will seek our friendship. If, on the contrary, we have no Army, and expect other countries to suppress theirs, shall we not expose ourselves to the derision of the whole world?"

"Of a truth these projects of disarmament would have no other results than to precipitate our ruin. The other Powers, seeing us reduced to such a point of feebleness and irresolution, would, without doubt, proceed to divide the Empire."

The same patriotic reformers, who recognised the necessity for the creation of a powerful Navy and Army, equally recognised the obligation for China to turn to the West in order to acquire the knowledge of those sciences, without which no progress is possible in the struggle between all kinds of international interests. They advocate the establishment in China of a system of modern technical and practical instruction, which will allow future generations to develop the national industry by the direct exploitation of the mines and other resources of the soil; by the construction of railways, the manufacture of guns, rifles, and other *materiel* of war, etc.; lastly, above all—because this is a question of urgency, a question of safety for the Empire—to see that the young men, who are destined for the career of arms, should be thoroughly inculcated in all the latest principles of the art of war, the perfecting of which must keep pace with modern science. And they are also of opinion that this cultivation of Western science, this initiation in all that is newest in the art of war, can be attained not so much by the study of Western literature, as by travelling, making acquaintance with other nations, and studying on the spot the organisation of other Armies.

"Our great misfortune," said one of these reformers, "is that we are ignorant, and if we are ignorant, it is in the first place because we do not travel. To live in Europe one year will be of greater use to us than the studying at home for five years of European books. How is it that the Japanese have made such progress, if not by this system?"

Let us examine then on what base and on what principles, as regards recruiting, training, armament, etc., the organisation of the new Chinese Army, or, to speak more exactly, the Army of the future in China, should be organised.

II.

There is an idea that the Court of Pekin will hesitate to give to the organisation of the forces of the Empire any great extension, and will avoid creating armies which might be a peril to the Dynasty. It can hardly forget the action of that factious and turbulent minority, which at Pekin, relying on the troops of Tong-Fug-Sian, held it in some sort prisoner, and imposed upon it a line

of conduct which proved to be so fatal to the interests of the country. But the danger which China has just avoided of seeing herself dismembered and divided between the Powers, and with which she sees herself still menaced by the covetousness of certain among them, who have their eyes more particularly on the rich and fertile provinces of the valley of the Yang-Tse-Kiang, is still pressing and formidable; so there is all the more reason that the Court, which is very circumspect and prudent, assured of the fidelity of the Mongol and Manchu elements, who are always the strongest contingent among the troops, and form the Emperor's personal guard, and to whom, moreover, the defence of the capital and of the province of Pechili is entrusted, will, without doubt, secure to the new organisation the necessary safeguards for avoiding a peril from which the present Dynasty has always succeeded in preserving itself. From another side, the events of which China has been the theatre, as on the occasion of the Boxer movement, have shown the Court that it can have perfect confidence not only in its dynastic troops, but also in the Chinese Armies proper, whose loyalty and devotion have been absolutely unfailing.

Another objection has been raised, in order to demonstrate the impossibility of China becoming a military state of the first rank, that the Celestials do not form a national entity, that the word "Fatherland" does not exist in their language, and does not appeal to them. This argument, which might possibly be applicable in a measure to the peoples of India, on account of the diversity of races, of religions, of customs, of interests, etc., which separate them, is without value when applied to an agglomeration of four hundred millions of inhabitants, who have the same ideas, the same customs, the same mode of existence, the same cult of ancestors, the same writings, and a system of laws, which has been common to them for some thousands of years; whose territory, in its natural limits, presents a veritable geographical unit; and, above all, where every subject can attain to the highest dignities, if he distinguishes himself by his learning and intellectual superiority, in the successive literary examinations in which all can compete. It cannot be doubted, in spite of a contrary opinion held by some writers, that Chinese nationalism, which has, since the campaigns of 1841, 1859, and 1860, been lying latent among the masses of the Chinese, is to-day a factor to be reckoned with. Already, a short time before the recent events, in her manifesto of the 21st November, 1899, the Empress had proclaimed the results that might be expected in the event of an approaching war:— "With a country like ours," she concluded, "a territory so extensive, with such natural resources, with hundreds of millions of inhabitants, so long as each man strives to show his loyalty and patriotism, who need fear the foreigner?" The popular explosion of the sentiments of hatred which recently burst forth from north to south of China, to the cries of "Death to Foreigners"—the rallying cry of races who rise to arms to struggle for their independence—is a striking manifestation of this nationalism.¹

¹ The hatred of the foreigner serves as a bond between the numerous secret societies, which are of a purely popular origin, and the body of Literati opposed to the reforms that threaten to bring about the active intervention of the Western nations in the internal affairs of China. And

We will not, however, go so far as to maintain that in this vast human anthill, which forms China, all the Celestials are capable in the same degree of understanding this sentiment of patriotism. In a country where are to be found large numbers of coolies out of work, beggars, persons ruined by the floods or famine,¹ disappointed and disillusioned members of the Literati class, and needy disbandied soldiers, the natural tendency is for them to swell the ranks of the disaffected, such as that of the Boxers, bands of whom still exist under different denominations in

it is by mounting on their colours the device, "Death to Foreigners!" coupling with it "By order of the Emperor and for the safety of the Dynasty," that the Boxers rallied to their side all the malcontents at the same time with the adherents of all the secret societies of the Empire, including those, such as the "Nénuphar blanche," whose aim was the subversion of the reigning dynasty.

Sir Robert Hart considers the outburst of the Boxer movement of 1900 as the prelude to a great transformation, and the point of departure in the future history of the Chinese Empire, "The China in the year 2,000 will be," he says, "very different to the China of 1900. The national sentiment is a constant factor which it is necessary to take into account, and which cannot be eliminated when one takes into consideration events which concern the people. The *mot d'ordre* 'China for the Chinese,' and 'Down with the Foreigners,' is but the awakening of this sentiment. This movement due, no doubt, originally to an official inspiration, seized upon the popular imagination, and presumably will extend through the whole length and breadth of the Empire.

"If it has not been successful, it has, however, shown what an echo it can awaken in the breasts of the people; its originators have learned that the lances and swords, with which, thanks to the prudence of the mandarins, they were at first armed, must be replaced by Mauser rifles and Krupp guns."

We may safely say that, if the Boxer explosion had been delayed for some months, and had not broken out, for example, till the month of December, the consequences would have been far more disastrous than they were; for in the early days of this month navigation on the Peiho is brought to a standstill by the floating ice, and the coast at Taku becoming at the same inapproachable from the same cause, the Allies must have carried out serious military operations in order to seize the forts which bar the entrance to the river. The Concessions at Tientsin, and the Legations at Pekin, could not have been relieved in time; a success on the part of the Boxers or of the Regular troops (such as the check to Seymour's column), over the first troops landed, who would have been obliged to open the campaign under circumstances of great difficulty, would have given to the Boxer movement such an extension and force that the Court, with the viceroys of the Yang-Tse-Kiang and of Canton, would in all probability have been unable to combat it, even if they had wished to do so, because those who unchain tempests of that kind are no longer masters of the elements, and find themselves in their turn swept away by the storm.

¹ The Chinese—men, women, and children—perish by thousands, or lose their all, when a famine, an inundation, or one of the numerous scourges so common to this country, has burst over some densely populated district, too often in the interior, where the people live almost entirely on the products of the soil.

various parts of the country, or even of bodies of rebels such as those from which the Taï-pings were formed. There is also a considerable section of the population, from among whom the foreigner is able to draw recruits, attaching them to himself by the inducement of gain, organising them into native corps, and even, at a given moment, inducing them to fight against their fellow-countrymen. Under these circumstances one can never prevent the Chinese, who are bound to merchants, missionaries, and others, by ties of gratitude, fidelity, or some powerful interest, from remaining faithful to foreigners with whom they are grouped, and with whom they consider themselves as united. But if a general war, an appeal to arms for the defence of the independence of their territory, such as that contained in the decree of the 21st June, 1900, of the Emperor Kouang-Tsu, if, in fact, a veritable levy *en masse* were decreed by the Court, to which the viceroys, the mandarins, the literati, etc., had unanimously given in their adhesion, there is no doubt but that the number of Chinese who would be deserters from the national cause will be then considerably reduced.

Another objection that has been made, and apparently with more reason, is that the Chinese have neither the soldier instinct nor military spirit, and that it would be consequently extremely difficult, if it had to be done, to inspire the great mass of the Chinese with the taste for soldiering: that the condition of the soldier is so despised by the Literati that the Army would not be susceptible of any real progress so long as it is officered by men of no standing, without prestige or professional knowledge, and the men recruited from the floating population of the towns, the scum of the population.

We will reply at once, that it would not seem desirable to us in the interest even of China itself, to see that warlike instinct revive, which makes the strength of other nations; and that at least she has possessed enough of it in the past to enable her to carry through the long series of struggles, which the establishment of her authority over the small States has demanded, at whose expense her own Empire has been founded. When the rapid increase of her population forced on China the unavoidable necessity of finding in the work on the land the common means of subsistence, her legislators rightly interested themselves in affixing the population to the soil, inculcating in them the love of agriculture, eradicating the taste for adventure and destroying as far as possible that fighting instinct to which the country owed its first prosperity and greatness. To the Literati, who had entered on the road of civilisation and intellectual aspirations, this instinct seemed a vestige of the barbarism of the primitive tribes, and to serve in some sort as an encouragement to those who were animated by it to return to the easier nomad mode of life of their forefathers.

Nor did this martial instinct exist, until lately, in a high degree in the Japanese people, with whom the Chinese are frequently compared, when the attempt is made to ascertain the causes of the immense progress accomplished in the Isles of the Rising Sun in the organisation of their Army, and the slow rate with which the transformation is proceeding in China. In Japan the profession of arms was, up to the middle of the last century, the exclusive privilege of the Samourai or Noble Caste—the feudal lords of the Middle Ages—and of the men at arms whom they raised on their estates. In these conditions, far from being an object of contempt, as in China, the soldier was respected; on the other hand, the Japanese peasant

like the artisan, who form the largest proportion of the population—had not, however, up to quite lately, displayed a very ardent taste for military service: the law of conscription was considered, as a matter of fact, as a heavy burden for the greatest number, and it is the example given by their nobles who courted the honour of commanding the new troops, and still more the echo of the first victories over the Chinese Army, which brought about a change in the disposition of the spirit of the nation, and procured for the Japanese Army the prestige and popularity which it enjoys to-day.

In China, on the contrary, as one knows, everything has been done to completely extirpate this military instinct. In order to allow the Government to maintain more effectually its authority over a population deprived of every means of defence, the carrying and use by others than soldiers, and the manufacture, except at the State establishments, of everything susceptible of being turned into a weapon, has been at all times forbidden under penalty of death.¹ It was thus that in Annam, where this regulation was equally in force, the unfortunate inhabitants of the villages, at the time when we founded our dominion in Indo-China, had nothing with which to defend themselves against the attacks of pirates or of tigers except bamboos, whose ends had been pointed and hardened in the fire. This systematic disarmament of the people was thus one of the most powerful weapons of government in the hands of the Chinese administrators. We may remark that the prudence of the Mandarins in this matter was generally carried to such a point of excess, that one is tempted to attribute to them the decision which was adopted by those who organised the Boxer movement—with the complicity, if not under the direction, of the Mandarins—of arming the followers of this sect only with bow, sword, or spear, assured that they would be able, thanks to this genial ruse, to easily put down this popular movement the day that it became a danger to the State. There is nothing improbable in this, as it is quite in accordance with the want of commonsense one may count on the Mandarins displaying. The result was to place the unfortunate Boxers at an enormous disadvantage when brought face to face with foreigners armed with quick-firing rifles.

It cannot, however, be doubted, that this warrior instinct, which their rulers have always been trying to eradicate in the Chinese, would not take long to re-awaken in the masses, if an appeal were made to it in view of the creation of a large army. It is permissible even to affirm, according to documents which have been published on these questions, that the Viceroys have always found—notably when they addressed themselves, as we have said, to certain Provinces reputed even to-day as warlike—they could raise as many bodies of volunteers as they desired. In the Chino-French war, large bodies of soldiers came thus from Hunan, ready to place themselves under the orders of the commanders of the Frontier Army. So, without counting the

¹ French officers who have made a stay in Pechili have nevertheless testified to the fact that in a large number of houses matchlocks are to be found; these weapons are used for hunting and to protect the crops against the birds. As ammunition, the people use small iron shot, which in the country takes the place of lead. The existence of these old guns is tacitly tolerated by the Mandarins, as the law about the carrying of arms is still in force in Pechili as in other parts of China.

Monguls and Manchus, among whom a natural taste for fighting makes every man in some sense a soldier, China will always offer an inexhaustible reservoir for the voluntary recruiting of all the men necessary to form her armies. Without having recourse to compulsory service, China has always possessed and will always find the necessary number of men when the need makes itself felt. But more than this is wanted: "Victory is the result, not of numbers alone, but of the value of the numbers." Therefore, when one sets to work to-day to create a powerful force, it is necessary not only to consider quantity, but quality, which implies good recruits and solid professional training of all the elements composing an Army, from the rank and file upwards to the commanding generals.¹

III.

Having acquired the conviction that an Army is not really powerful and capable of victory, unless it can rely upon the confidence and respect of the nation whose security it is charged to guarantee, some of the high Mandarins, who are at the head of the progressist movement, have not hesitated to proclaim as the premier condition of restoring the prestige of the Chinese Army the necessity of first reinstating to a place of honour the profession of arms. They hold that the surest means of effecting this change in public opinion is to insist that the officers for the future must be made to realise the importance of the mission which is confided to them, and that the soldiers, in lieu of being taken from the dregs of the population, and consequently being often impelled to pillage, and to fraternise with rebels or the Boxers—whose principal object to-day, for the most part, is only a dissimulated attempt at brigandage—should be recruited with very great care, from the double point of view of physique and morals.

The measure taken by Tcheng-Tchi-Tong, in Ou-Tchang, of making the Mandarins place one of their sons in the new military schools in order to enhance the prestige of the military calling, and also the regulation insisting that every volunteer should know how to read and write, and that he should come from an honourable family, will in all probability soon be extended to the rest of the Empire. Measures are also likely to be taken for rejecting for the Army gamblers and opium smokers, the destroyers *par excellence* of discipline in the Armies of the East, as drunkards are in European Armies; while certain provisions, which are in force in some corps, with the object of strengthening the moral education of the soldier will be made general. In fact, Yuan-Shi-Khai, the present Viceroy of Pechili, has already entered on this path; he only wants for his Army

¹ There is yet another factor which it is necessary to take seriously into account in a country of such extent as China, and that is the greater or less facilities which exist for effectively using the good *matériel* of these armies; before long a network of railways, for concessions to construct which the Powers have long been struggling, will facilitate the concentration of these forces in a reasonable time, and would prevent, in a certain measure, what took place in 1898, at the time of the seizure of Shantung by Germany, when the excellent troops of Kan-Sou arrived so late that he had been obliged to come to terms before they came up.

men from twenty to twenty-five years of age, of fine stature, able to read and write, and whose moral conduct the villages from which they are drawn will, in accordance with the Oriental method of recruiting, guarantee. This method of recruiting, however, is calculated to excite the discontent of the families in easy circumstances, who are thus more particularly made to contribute to the formation of these contingents; but one cannot ignore the fact that if this method is really followed, it would contribute powerfully towards the formation of a real Army, possessing the elements of good cadres.

The point, however, is to find the means of giving to these cadres the special instruction which to-day is more indispensable for them than ever, in view of the best possible utilisation of the resources which science places at the disposition of the art of war. It is necessary moreover to weld together all these elements by that spirit of solidarity which unites as one in view of a common objective all the wills, the efforts, and intelligence; to develop in them both the love of their calling and their patriotism, of honour and of duty—all those sentiments, in fact, which kindle the heart and make armies victorious; it is necessary, in one word, to infuse the military spirit into the Chinese Army.

The Chinese soldier could acquire a sufficient military education by the methods actually employed in some of the newly formed corps, great stress above all being laid on musketry instruction and rifle practice, and still more on the practical training of the *personnel* of the artillery, which are the weak points in the military instruction of Orientals, and of the Chinese in particular. "Plenty of musketry exercise and firing at a target" was Napoleon's order to his generals; "Manufacture enough cartridges, so that the soldiers can practise firing at a target every day." The attention of the heads of the Army must be specially drawn to this point. All documentary evidence goes to show that the Chinese have the makings of good soldiers in them. Docility, sobriety, endurance, contempt for death are some of the qualities which nobody can deny them.

This opinion was that of Monseigneur Favier in 1897, when he published his work "Peking." Among other things, he remarks:—"For the last fifteen years, intelligent Mandarins, especially the Viceroy Li-Hung-Chang, have attempted to form their troops on the European model, and have been partly successful; well armed, severely disciplined, properly clothed, living in entrenched camps or fortresses, these troops have been much praised by European officers who have seen them drill. Nearly a hundred thousand men have been thus drilled, and should have represented a real force, because they show no lack of bravery, if they had been commanded by capable officers and their commissariat been properly organised." Gordon, on his side, expressed similar opinions as to the aptitude of the Chinese for making good soldiers. "The old legend is exploded," he wrote as the result of his experience during the period of his command of the Chinese Army, "as to the poltroonery of the Chinese soldier, who only requires to be well commanded. The regularity of his habits, which is so remarkable in times of peace, gives place in the field to an audacity bordering on imprudence. His intelligence and excellent memory make him a very good non-commissioned officer, the coldness of his temperament and his imperturbable calm are not the least valuable of his qualities. Physi-

cally he is not perhaps on the average so robust as a European, but he can stand quite as much as any other Oriental. A moderate ration of rice, vegetables, salt fish, and pork is sufficient to enable him to stand the greatest fatigue, whether in a temperate climate, or in the tropical regions which have so much effect on the energy of Europeans."

This portrait is that of a Chinese soldier, who has been instructed or has fought under the orders of Europeans, of one who has thus acquired the military spirit; it is the portrait also of the Black Flags, or the pirates of the Tonkinese frontier, in a word, of a Chinaman who knows war. There is no doubt that the soldiers drilled to-day in the European fashion, of the Armies of Pechili or the two Kiangs, would be capable, well organised, of furnishing excellent units for the field.

IV.

But if it is relatively easy for China, by appealing above all to the co-operation of foreign instructors, to rapidly procure enough soldiers sufficiently drilled and disciplined to constitute the elements in infantry, cavalry, and artillery, of good fighting units, it is quite another thing when the question is of developing in the same degree the professional value of the officers, especially of those who are destined to hold high commands, and of those who ought to compose the staffs of the different Armies.

The Chinese special military schools are capable of furnishing a sufficient number of subaltern officers, provided that in the schools for some years to come, and also in the different corps, the direction of the practical military instruction is confided to European officers. For the larger number of the officers destined for staff duties and high commands a deeper knowledge of the methods of instruction, of battle tactics, etc., of foreign Armies is indispensable. In order to acquire this additional instruction some young officers, each year, should be selected after a term of regimental service from among those who have distinguished themselves by their knowledge and military aptitude, to proceed abroad. During their stay, which should extend over some years, they should obtain permission from friendly Powers to attend the courses in the special and superior military schools, being attached in turn to regiments of each branch of the Army, and they should also attend the grand manœuvres. In this manner, and in addition by doing the duty of Military Attachés, they will be able, as the Japanese have done, to master the details of Western military life. It will call for some sacrifices, which will burden slightly the Chinese War Budget; but the adage "Where there's a will there's a way" is as true in China as elsewhere; and is it not a hundred times preferable for a nation to devote each year some millions to prepare for war and to be in a state to ensure honourably the defence of its territory, than to be obliged to pay, for example, fifteen hundred millions (francs) as China had to do lately, in the shape of indemnities to other Powers? Meanwhile, the first reform to be accomplished by the new Military Mandarinate ought to be the ridding themselves of a certain number of prejudices, of methods of procedure, of time-honoured customs with which the new military education may clash.

Thus the active service which is incumbent on an officer cannot be reconciled with that strict obligation of etiquette which does not

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allow a Mandarin, no matter how low a grade he may hold, to concern himself with the material details of life, to be on good terms with his inferiors, or to move for however short a distance, without lowering himself in the eyes of all, except in a palanquin or chair carried by porters, and surrounded by the army of satellites which forms the obligatory *cortège* of all officials. The officer, on the contrary, must necessarily, in carrying out his duties, aim at being in touch with his men, in order to acquire a practical knowledge of their needs, and of the maximum of effort which he can by right, in case of an emergency, call upon them to make. During manœuvres and on active service, whether on foot or on horseback, he must live continually the soldier's life, ready to set an example in endurance, of contempt for death, and to be in a position to make his personality felt at an opportune moment to the fullest extent.

(To be continued.)

THE FRENCH NAVAL PROGRAMME OF 1900-1906.¹

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(Translated and abridged by permission of the Author.)

Continued from October JOURNAL, p. 1180.

CRUISERS.

THE second category of large ships in all modern Navies are those which come under the general classification of cruisers.

Their leading feature should be the predominance of speed and radius of action over offensive power and protection.

In the earlier history of modern cruisers such an importance was attached to speed, that everything, even radius of action, was sacrificed to it. It was an epoch when the dimensions of the ships were diminished of set purpose in order to have a larger number of the same type, it being considered that the number of units was of greater importance than their power.

PROTECTED CRUISERS.

This period was marked by the construction in every Navy, but more particularly in ours, where the idea originated, of ships with displacements of from only 1,500 to 2,000 tons, in which every effort was made to attain the highest speed, which could be reached at that time, but at the sacrifice of every other quality, owing to their small displacement. Their offensive power was represented by a small number of medium sized and small-calibre guns, with two or three torpedo-discharges for use against battle-ships if any opportunities presented themselves. The only protection was afforded by a thin steel armour deck, which extended the whole length of the ships at the water-line, below which was the machinery. The radius of action was necessarily limited, owing to the small size of the ships. We have no hesitation in saying that these cruisers have two grave defects. In the first place, their protection and armament are now recognised to be far too weak. In the second place, experience has

¹ "Le Programme Maritime de 1900-1906. Par J. L. de Lanessan, Député, Ancien Ministre de la Marine. 2nd Edition. Paris : 1903.

shown that the speed for which everything else has been sacrificed was a merely nominal one, since it fell off very rapidly when the ship had to struggle against ever so little a sea. One knows to-day, as the result of experience, that no fast cruisers of less than 4,000 tons displacement can hope to maintain, in spite of the sea, a speed anything like that attained at her trials.

These larger displacements were adopted, as soon as the necessity for them was clearly demonstrated; but the only protection for these fast cruisers continued to be an armoured deck, and cofferdams running along the side above this deck. The economy realised, however, by the weights which represented protection, served to increase the offensive power, particularly in the matter of Q.F. guns of a medium calibre.

During the last fifteen years there have been built in France, England, Germany, and Italy, a very large number of these so-called "protected" cruisers, the speed of which is more or less considerable. England possesses to-day 130, France 33, and Germany 25 of this kind of vessel. As it became necessary to add to the offensive power, so little by little the displacement increased. In England, in the "Powerful" and her unique sister the "Terrible," it rose to 14,200 tons. In France, in the "Guichen," we have reached 8,280 tons, with a speed of 23 knots, and a ship which is the most perfect type of her class. In spite, however, of her comparatively speaking large displacement, which raised the cost of her construction to nearly 16,000,000 francs (£640,000), and the cost of maintaining her in commission to more than a million francs (£40,000), the "Guichen" and her sister the "Châteaurenault" are condemned by all our officers on account of their weak armament, which is composed only of two 6·4-inch Q.F. and six 5·5-inch Q.F. guns, with twelve 3-pounders.

ARMOURED CRUISERS.

Nearly every Navy has now given up the construction of protected cruisers, as it is realised that a vast expense has been incurred on a class of vessel which, although they may be able to work mischief against unprotected merchant-ships, are quite incapable of holding their own against any ship better protected than themselves, and may even be put *hors de combat* by a simple armed mail-boat. Consequently, during the last few years, all Navies have striven to give at least a certain number of their cruisers a relatively speaking fair amount of protection.

France was the country which set an example to other countries in this matter. In July, 1888, the "Dupuy-de-Lôme" was laid down, a vessel where protection was afforded not only by an armoured deck, but also by armour which covered her hull from end to end, to a height of some twelve feet above the water-line. Her armament was for those days a very powerful one, consisting as it did of two 7·6-inch, and six 6·4-inch Q.F. guns, with six 9- and six 3-pounders. The 7·6-inch and 6·4-inch guns were mounted in turrets protected by 5-inch armour. Unfortunately, owing to her limited displacement (6,780 tons), it was not possible to give her a greater speed than 19 knots, so she cannot compete with ships of the same class, which are being laid down to-day, all of which can steam from 21 to 23 knots; her small displacement also did not allow of proper protection being given to her hull, her side armour

being only 4 inches thick, which is quite insufficient even against the medium guns of similar foreign ships.

After the "Dupuy-de-Lôme," between 1889 and 1903, we laid down five other armoured cruisers with displacements varying from 4,000 to 5,500 tons, all of which had the same qualities and the same faults as their predecessor; especially in the matter of speed, which did not exceed 19 knots.

At the end of 1895 we made our first attempt to obtain an armoured cruiser which should attain a high speed. This was the "Jeanne d'Arc," which was to steam 23 knots, and of which the armament was to consist of two 7·6-inch Q.F., fourteen 5·5-inch Q.F. guns, and sixteen 3-pounders. The speed and armament may be considered sufficient for a cruiser, but the protection is not in proportion to her offensive power. She has a complete 6-inch water-line armour belt, tapering to 3 inches, 7 feet 2 inches deep, which rises 2 feet 4 inches above the water-line, with a thinner belt of 3-inch steel reaching 8 feet 3 inches above water-line, tapering to 1·5 inches at the bow and stern, the plating forward being carried up to upper deck. The turrets for the two 7·6-inch guns are 8 inches thick, but the casemates for the 5·5-inch guns are only 2·5 inches. With this protection, the "Jeanne d'Arc" could not with safety risk battle with several similar ships which have been built abroad. The insufficiency of the protection can only be attributed to the displacement having been limited to 11,329 tons. Moreover, 6·4-inch guns should have been substituted for the 5·5-inch, in view of the fact that all foreign armoured cruisers carry 6-inch guns.

The same defect of insufficiency of tonnage is to be found in all the armoured cruisers, which have been laid down since the "Jeanne d'Arc," viz., the three of the "Kléber" type, with their 7,710 tons, the three "Amiral-Gueydons," with their 9,547 tons, and even the five of the "Gloire" type with their 10,000 tons. All these ships have a speed of 21 knots, which may be considered sufficient, but their protection and their armament are inferior to similar foreign ships.

It was only after the "Jeanne d'Arc" had been laid down that England commenced to build armoured cruisers. Faithful to her custom of not recoiling from large displacements, she gave 12,000 tons to the first ships of the type, which she laid down, the six ships of the "Cressy" class with a speed of 21 knots. Then, in the "Drake" and her three sisters, the tonnage was increased to 14,000, with a speed of 23 knots, that is, a little less than 22 knots under the conditions in which our ships make their trials. With the "Drake" class the English Admiralty have realised the most remarkable armoured cruisers which have as yet been constructed. Somewhat later she has come back with the "Essex" class, to a displacement of 9,800 tons, that is to say, to a type analogous to our "Gloires," with a speed of 21 knots.¹

With us, in the "Jules Ferry," "Léon Gambetta," and "Victor Hugo," laid down in 1900-1901, and which form part of the 1900 programme, we have increased the displacement to 12,550 tons, and the speed to 22 knots, which will be at least equal, if not superior, to the English cruisers of the "Drake" type.

¹This is, of course, a mistake on the Author's part, as the "County" class have a speed of 23 knots.—TRANSLATOR.

Speed and radius of action having to be the two predominant qualities of cruisers, the different Navies acted evidently quite logically, when, in the protected cruisers, they sacrificed to these two qualities the whole of their protection and in a great measure their offensive power. But in naval questions, as in every other, solutions inspired by pure logic very rarely meet the necessities of the case, as revealed by experience.

We have seen already that our battle-ships would have been very inferior to their foreign rivals if we had completely sacrificed their speed and radius of action to the two primordial qualities of offensive power and protection. In order that they might be in a condition to fight with sufficient chances of success against those of other nations, it was necessary that their speed and radius of action should at least equal, if it did not surpass, the speed and radius of action of their foreign rivals.

Analogous obligations are imposed in the case of cruisers. Called upon to fight, under certain circumstances, against similar foreign ships, it is not sufficient that their speed and radius of action should be equal or even superior to that of their opponents, it is necessary that their offensive power and protection should be such, that they will not be compelled to decline battle with ships of the same class, when it would be to the interest of the country for them to accept the challenge.

However, as battle-ships cannot aspire to a speed and radius of action equal to that of cruisers, without sacrificing their offensive power or protection, or else exceeding the rational limits of tonnage, so in the same way cruisers cannot aspire to possess an offensive power and protection equal to that of battle-ships, except at the expense of their speed and radius of action, or without exceeding the extreme limits of displacement.

Accordingly we can only consider as an unrealisable dream, at least under the actual conditions of present day Navies, the *desideratum* expressed by certain persons that the qualities of the battle-ship and the armoured cruiser should be combined in one ship, to which could be assigned the fighting *rôle* now actually played by the two classes of ships.

In all the attempts which have been made to secure this object, it has been at the expense of the protection primarily, and in the second place of the heavy artillery, that the reductions necessary to obtain an increase of speed and increased radius of action have been made. It is thus that in a plan prepared by the Technical Section of the Ministry of Marine, for an "armoured cruiser" of 13,700 tons, to have a speed of 21 knots, and to be armed with four 10-inch and sixteen 6·4-inch Q.F. guns, the protection of the hull was only to consist of an armour belt from 6 to 7 inches thick. Not having greater protection than armoured cruisers, this ship would never have been able to accept battle with any battle-ship worthy of the name, and could not consequently play any other *rôle* than that of an armoured cruiser, while she would labour under the disadvantage that, compared with others of her tonnage, her speed would be appreciably less.

We can show by this example how the Navy is obliged to obey the law of specialisation, to which all organisms, the product of human genius, have to conform, equally with those which nature produces. If we wish to have a good and useful armoured cruiser, we must apply, when working out the plans, the principle we have already laid

down, viz., the necessity of endowing her very largely with the two essential qualities of cruisers, speed and radius of action, and to put these qualities, if possible, to a higher point, than they are reached in similar foreign ships; but not to try and increase them to such an extent as to involve the sacrifice of offensive power and protection. It will be of little use to us to possess cruisers faster than those of our rivals, if they are incapable of showing fight, as in that case the greater part of their time, in war, will be spent in running away.

There is, in a word, for armoured cruisers, as for battle-ships, an harmonious mean, characterised by a development of the four qualities essential for all ships of war, so that each unit shall have nothing to fear from similar units constructed abroad.

THE ARMOURED 12,550-TON CRUISER OF THE NEW PROGRAMME.

It is in view of these conditions that the plans of the 12,550-ton armoured cruisers, which figure in the 1900 programme, have been drawn up. Their speed will be 22 knots, that is, equal if not superior to that of the English cruisers of the "Drake" class. Their radius of action will be 7,500 miles with the normal coal supply, and 12,000 miles when coaled to their fullest capacity, that is to say, a radius approaching that of the "Drake." Their offensive power will consist of four 7·6-inch guns, in pairs in two turrets, one forward and one aft; sixteen 6·4-inch guns, twelve of which will be in pairs in six turrets, three each side, and four in casemates; twenty-two 3-pounders, and five torpedo-tubes (two submerged). The protection of the hull is assured by a complete belt 6·8 inches thick at the water-line, 7 feet 6 inches deep, tapering to 4 inches at the ends; with an upper belt reaching up to level of the main deck, 5 inches thick; the total height of armour protection above water-line is 7 feet 9 inches, except forward as far aft as foremast, where 2-inch armour is carried up to upper deck. The lower armoured deck is 2 inches on the flat and 2·8 inches on the slopes, and the upper armoured deck 1·8 inches thick. The turrets for the 7·6-inch guns are 8 inches thick, those for the 6·4-inch guns 5·8 inches thick, and the casemates 4·8 inches. These cruisers therefore represent a more powerful type on the whole than any others which have been as yet laid down abroad, and they will be able to accept battle with any they may come across and fulfil all the various duties which fall on vessels of this class.¹

FIGHTING DUTIES OF CRUISERS.

The military duties of cruisers vary naturally, in a certain measure, with the qualities of the units of this class of ship. The same rôle, for instance, cannot be assigned in war to "protected" cruisers as to "armoured," to the fastest as to those of only medium speed, to cruisers strongly armoured as to those where the protection has been sacrificed to some other qualities, to those heavily armed as to those with only a medium offensive power. It is first to the general

¹ The displacement of the armoured cruisers of the 1900 programme, which yet remain to be laid down, has been increased to 13,550 tons.—TRANSLATOR.

staff, and then to the commanders of the different fleets, must be assigned the duty of telling off in war the different classes of cruisers for their special work, taking into account the good qualities and faults of each ship. We must now indicate in a general fashion the principal military duties which fall on this class of ship.

I.—SCOUTING FOR THE BATTLE SQUADRONS.—DESPATCH VESSELS.

Cruisers are useful auxiliaries to the battle-fleets for various reasons. In the first place they serve as the eyes of the fleet, observing the movements of the enemy and keeping up communications with the shore. For this special rôle speed must be the predominant quality. Cruisers sufficiently fast to be in a position to escape from a more powerful enemy will suffice for this. There are thus a certain number of officers who advocate the construction for scouting purposes for the battle-fleet of light cruisers, or *estafettes*, which should have a speed of 24 or 25 knots, and a sufficiently heavy displacement (about 4,000 tons), so that they will be able to steam without being stopped by the sea. Their protection would be limited to an armoured deck over the engines, and their armament would consist of guns not exceeding 3·9-inch, which would be principally for the purpose of use against destroyers and torpedo-boats.

After prolonged discussions, the Superior Council of the Navy has reported in favour of constructing a certain number of these vessels, but has deferred their commencement for the present, considering it better to devote all our energies to ships of greater fighting value.

In default of these *estafettes* we must employ for scouting duties with our squadrons and keeping up communications with the land, the protected cruisers of which we can dispose and the destroyers of the "Hallebarde" type. These last, thanks to their 26 knots trial speed, can easily maintain a sea-speed of 16 or 17 knots, even in a seaway, and are quite fit to act the part of *estafettes*, while in war time they will be able to run down the enemy's sea-going torpedo-boats, and even make head against the English destroyers.

Scouting duties can also be carried out by armoured cruisers. These would have the advantage over *estafettes* of not only being able to fight the enemy's protected vessels, but also many of his armoured cruisers; a considerable advantage when it comes to maintaining communications between the squadrons and the land, for the breaking of these communications might have, in certain contingencies, grave consequences. If it is necessary in order to communicate with the land to cross the enemy's lines, a very fast cruiser, which is both well armed and armoured, would be much better fitted for the work than a mere *estafette*, whose only means of protection would be flight, and which quite conceivably might be forced to run in a direction directly opposite to where she was bound.

A Useful Screen for the Battle Fleets.—Cruisers can again render useful service in keeping hostile torpedo-boats and destroyers at a distance from the fleet. Some persons have been advocating recently the construction in our Navy of a special type of vessel, whose duty it would be to run down the English destroyers. They demand for this purpose vessels of from 700 to 1,000 tons, steaming 30 or 32 knots,

armed with small guns, without any protection; the small armament and the absence of all protection being indispensable if these vessels are to attain the very high speeds it is wished to give them, without exceeding a displacement of 800 to 1,000 tons.

Such ships might undoubtedly render invaluable service against the English destroyers, and the destroyers or torpedo-boats of other countries; but to be really effective we ought to have a large number of them. The question therefore is, whether the expense of constructing such a flotilla would not considerably exceed their fighting value? And it is a sufficient answer to point out that the speed of 1,000-ton vessels falls off enormously if there is any sea on, and they would therefore easily be run down by ships of large tonnage, which although not so fast in normal conditions, can yet maintain their speed in a seaway. To expend large sums in constructing a flotilla of vessels to destroy destroyers, which themselves will meet with the same fate at the hands of protected cruisers or vessels of larger tonnage better armed than themselves, was an enterprise a little too chimerical to be adopted by the Superior Council of our Navy. No action has therefore been taken in that direction, nor ought there to be.

Our protected cruisers, and above all our latest armoured cruisers, with their 12 to 22 knots speed, which they can maintain in weather when destroyers would lose theirs, will be quite able to chase and destroy the enemy's destroyers, when the small vessels of which we have spoken would not be able to do so. This is not the special duty which would be assigned to them, but it might quite fall in their way, either when scouting for the battle squadrons, maintaining the communications with the land, etc., or in carrying out other duties with which they might be charged.

Auxiliaries in Action to the Battle Fleets.—Cruisers may render valuable service by acting as decoys, engaging and holding an enemy until the rest of the fleet can come up; while during a battle they may, even at long ranges, be able to inflict appreciable damage from their quick-firing guns upon his battleships, engaged as they will be in a life and death struggle with the ships immediately opposed to them. They ought also to be ready to seize the opportunity of attacking battle-ships which, through damages they may have received, have lost their offensive superiority, and also of destroying the hostile destroyers and torpedo-boats.

In operation against the enemy's seaports and coasts they ought to be able to contribute much to their success, thanks to their speed and their powerful quick-firing batteries. There are no ships better suited for making sudden night attacks against batteries or harbours, whether with the object of preparing the way for an attack in force by the fleet, or for creating a diversion to draw attention away from the real point threatened.

Although armoured cruisers can co-operate very effectively with battle squadrons, it will often be preferable for them not to have the same harbours or keep company with them. It will be advisable to group them, both in time of war and when war is threatening, in our naval harbours of the second rank, such as Cherbourg, Lorient, and Rochefort, or in commercial harbours like Dunkirk, Havre, Lezardrieux, etc. From these points it will be easy to direct them rapidly to whatever point where they may be

required, for there are a number of strategical combinations which can only be decided on when the time for such operations arrives.

There is however one thing which cruisers should not attempt, and that is attacking at ordinary fighting range any battle-ship which is worthy of the name; to do so is, humanly speaking, only to court defeat. It has been maintained in some quarters that an armoured cruiser carrying a heavy battery of medium quick-firing guns could do this with hopes of success, if proper advantage was taken of its superiority in speed to maintain a position favourable to itself at long range. Although some years ago when battle-ships carried only a few very heavy guns, which could only be fired slowly, there might have been some grounds for this opinion, yet in these days, when the rate of fire of heavy guns has been much increased and battle-ships carry in addition powerful quick-firing secondary batteries, the destruction of the cruiser would be inevitable. Any advantage which cruisers might at one time have had from the nature of their armament, they were deprived of when secondary batteries were added to battle-ships. The latest French battle-ships, for instance, carry as many medium quick-firing guns as the largest armoured cruisers do. Even admitting that the medium batteries of the two ships are even, the advantage must still all be on the side of the battle-ship, from her greater stability as a platform, her greater protection, and the formidable fire she can bring to bear from her heavy guns, which even at long ranges would pierce the thickest armour a cruiser carries. Moreover, owing to the shape of her hull and her fine lines, an armoured cruiser can never be the steady platform for her guns that a battle-ship is, so that no matter what the state of the sea, the chances are all in favour of the battle-ship, even supposing the cruiser maintains to the end of the struggle her superiority in speed. But of all the qualities of a war-ship speed is undoubtedly the most uncertain. It is liable to such essentially changeable conditions. The least mistake in stoking, the smallest accident, are sufficient to make the speed drop several knots, so that any diminution of her speed in an action would infallibly be attended with fatal results.

The only logical conclusion that can be drawn is that if an armoured cruiser comes across a battle-ship, she should use her speed to avoid being drawn into action.

DESTRUCTION OF THE ENEMY'S CRUISERS AND MERCHANT-SHIPS. —CORSAIRS.

One of the most important duties of cruisers is the capture or destruction, if possible, of the enemy's cruisers and small vessels.

Armoured cruisers, in fact, have been designed specially to hunt down protected cruisers and small vessels, of which latter class it must be remembered England possesses more than 130, and these ships are the most numerous element on her distant stations, and it is to them that, in a great measure, the defence of her merchant-ships in Colonial waters and distant seas will be confided. Germany, on her side, does not appear as yet to have given up the construction of protected cruisers, as thirty vessels of this type, with a displacement of some 3,000 tons, a 22- to 23-knot speed, with an armament of 3·9-inch guns, figure in her last programme.

Under these circumstances, whether we contemplate the possibility of a war with Great Britain or with the Triple Alliance, our

interest evidently lies in only building from this time on armoured cruisers, as a single unit of this class of ship has much more value than two or three simply protected cruisers. As, on the other hand, our rivals are adding to their protected cruisers a considerable number of armoured ones, it is necessary that the ships of this class, which we construct, should be as powerful as possible. If we do this, we may count on being able to employ our armoured cruisers on every duty for which vessels of this class are suited, without having to fear that they will be driven off by similar vessels of the enemy.

In some quarters it is considered that the principal duties of cruisers will be to run down the mail and cargo steamers of our eventual enemies, and as England is the nation with by far the largest merchant fleet, it is in view of a war with her that the partisans of *corsair warfare* advocate the construction of cruisers. They have even, with this object, devised ships of a particular type, to which the name of *corsairs* has been given. It is owing to this conception that we owe the three very high-speed cruisers "Guichen," "Château-renault," and "Jurien de la Gravière," about which it is advisable to say something before we proceed to discuss the question of *corsair warfare*.

The two first have a displacement of about 8,000 tons, while the "Jurien de la Gravière" is 5,685 tons. All three have a measured mile speed of 23 knots; their offensive power is represented only by eight 5·5-inch Q.F. guns and fifteen or sixteen guns of small calibre; the engines are only protected by an armoured deck, while the protection of the guns is *nil*. Thanks to their speed and armament these ships can render undoubted service as *commerce destroyers*, so long as, it must be understood, the merchantmen are not convoyed by better armed and better protected ships on their side. If we go to war with England this indispensable condition will not be realised, for it is no secret that she intends to utilise her old armoured cruisers for convoy duty, particularly in European waters, where the great mass of merchant-ships converge. Against merchant-convoys thus protected, our *corsairs*, no matter how fast they may be, will be almost powerless, owing to their own complete want of protection.

Thus it was not for this that those who designed these ships destined them. Their view was rather that they should be employed in distant seas, far from European ports, and acting independently in searching for and either destroying or holding to ransom any merchant-ships they came across, *querens quem devoret*. It was for this reason that in their design everything in these ships was sacrificed to speed and radius of action. By giving them so weak an armament and practically no protection, it was recognised that they must run from any ship which was either better armed or better protected than themselves.

At the time when the idea of constructing this description of ship was first conceived, to which the characteristic title *commerce destroyers* was given, that is in 1894, France was the only country which possessed real armoured cruisers.¹ Every other country was still

¹ M. de Lanessan overlooks the seven vessels of the "Orlando" class, ships in their way as formidable as the "Chanzy" and her sisters.—TRANSLATOR.

building only protected cruisers, and our *commerce destroyers* did not differ from the cruisers of our rivals, either building or in construction, except in their greater speed and greater radius of action.

However, in 1894, the difficulty was pointed out to the Minister of Marine, who was then advocating *corsairs*, by the Superior Council¹ of the Navy, of combining fighting capacity in these ships of large tonnage, except at a high cost for construction and maintenance,¹ and which, in consequence of the weakness of their armament, would always have to secure the means of getting away whenever they attacked.

It may be accepted that if, from whatever cause, these ships were compelled to accept battle with an enemy smaller but better armed than themselves, their defeat, which is hardly doubtful, would cause a feeling all the more mortifying from the way in which the rôle they are supposed to be about to play has been extolled.

The justice of these objections seems to-day all the more evident from the fact that almost every country is giving up cruisers, which are only protected, for powerfully armed, very fast, armoured ones. Under these circumstances our cruisers without protection will be condemned to pass their time in continual flight from the armoured cruisers of the enemy. Even admitting that they may destroy some merchant-ships, they will themselves, in all probability, meet very soon the same fate. If, therefore, we are for the future to devote ourselves to *corsair warfare*, we can only carry it on with safety by means of armoured cruisers.

But this is not all. Merchant-ships, which carry passengers and valuable cargo, have for some years past been built to maintain high speeds; it will be necessary therefore for cruisers, which in time of war are to run these vessels down, to be able to steam from 21 to 23 knots. It is not, however, by any means certain that our cruisers, even after attaining this speed on their trials, will be able to catch mail-steamer, which may be sensibly slower. Mail-steamer are accustomed to maintain a constant high rate of steaming, all their mechanism is made with this object, and their engine-room staffs trained for it; whilst *war-corsairs* will only, from economical motives, be able to get up their highest rate of speed, at the moment when it becomes absolutely necessary, either to avoid some danger or to chase an enemy. The chances are, when the speed of the vessels is almost the same, that the mail-steamer will almost always escape the cruiser, and that even if her speed is a little less she will still have a very good chance of doing so.

Some of our officers therefore have held the opinion to chase merchant vessels, it will be better to employ high-speed mail-steamer,

¹ The "Guichen" cost sixteen million francs (£640,000) to construct. The recent expedition to China gave an opportunity of showing whether the value of the ship was worth the outlay on her. At a speed which never exceeded 16 knots, and of which the mean was only 13 knots, and only being at sea 1,400 hours (58 days 8 hours), the "Guichen" expended more than 600,000 francs (£24,000) in coal. If one remembers that to steam 23 knots she expends 21·5 tons of coal an hour, one can see how enormous the cost of coal would be in time of war, which we may expect.

fitted as auxiliary cruisers, rather than build a special type of warship for the purpose.¹

The justice of this opinion will not be contested if it is applied to vessels like the "Guichen," "Châteaurenault," and "Jurien de la Gravière," that is to say, the *corsairs* pure and simple, not armoured.

However, in view of the fact that Naval Powers are now building almost exclusively armoured cruisers, mail-steamers fitted out as *corsairs* would seem to be condemned in future wars to the single work of destroying merchant-ships. Deprived of all protection, they will be unable to fight even a protected cruiser, much less an armoured one. Whatever may have been the case a few years ago, the policy of transforming them into *corsairs* is to-day questionable; they may be of some service in time of war, but they cannot be counted upon for carrying out any really important fighting service.

THE NECESSITY FOR ONLY CONSTRUCTING FIRST-CLASS ARMoured CRUISERS.

Another of the consequences of the road along which all Naval Powers are now travelling is that the French Navy must build, even in view of *corsair warfare*, only armoured cruisers of the very first order. Not having the means of providing a large number of units, as the cost of construction and maintenance would be too heavy for us, we must not hesitate in securing quality.

Even for *corsair warfare* it will be better to have fewer cruisers and have them heavily armed, very fast, amply protected, and with an extensive radius of action. They will make, perhaps, fewer prizes, but they will make them with less danger to themselves and with a greater chance of securing a profit. It is these armoured cruisers which we must build in view of *corsair warfare*, and we must build vessels that will have nothing to fear from similar foreign vessels. That is to say, we must employ for running down merchant-ships the same armoured cruisers, which we shall employ on all the other duties this class of vessel is expected to fulfil.

¹ Vice-Admiral Fournier holds this view strongly, to which he gave expression in the little work he published in 1896, under the title of "La Flotte Nécessaire." He pointed out "how illusory is the idea that ships of war can compete in the matter of speed with the very fast mail-boats, which are accustomed to maintain their speed for several days together, everything being sacrificed to enable them to do this; and he came to the conclusion that the only feasible method of catching mail steamers and running down merchant-ships was to arm in turn fast mail-steamers, and to man them in war-time with officers, crews, and engine-room staffs, properly trained during peace, for the duty of working these auxiliary cruisers in an efficient manner. The State should do all it can to encourage the great shipping companies to give their mail-steamers the highest speed realisable at the time they are laid down." M. de Lanessan, in commenting upon this, states that the efforts made to induce the great companies to build very fast steamers have not been successful; not only is the cost of building such vessels very high, but the expense of maintenance and of the coal they consume is also very great. If really fast armoured cruisers are built, the *raison d'être* of armed mail-steamers as *corsairs* disappears.

There is another still stronger reason why we should only build armoured cruisers of the first-class, and that is the very limited number of our over-sea *points d'appui*, as compared to the large number of naval stations which England possesses in the seas which bathe the coasts of our colonies. The result of this will be that in the case of a war with Great Britain it will be extremely difficult for our cruisers to gain our colonial harbours for resting and filling up with coal and supplies. They will only be able to do so if they have a sufficiently large radius of action to permit them to remain at sea, while waiting a favourable opportunity for passing through the enemy's cordons without too great a risk. To accomplish all this, it is indispensable that they should be of large displacement, for without this condition it will be impossible to combine in them all those numerous qualities which are essential to their efficiency.

To resume, whether we consider our cruisers as the auxiliaries of our battle-squadrons or as the destroyers of weaker ships of war, or whether we look upon them merely in the light of commerce destroyers, we can but arrive at the one conclusion, that they can only fulfil their duties effectively if they surpass or, at the very least, equal similar foreign vessels in speed, radius of action, offensive power, and protection. The proposed large cruisers which figure in the new programme seem to fulfil all the necessary conditions, and we shall be able to employ them indifferently for any or all the duties we have enumerated. And if, for reasons which can be foreseen, a *corsair* war appears inadvisable or impracticable, or unlikely to produce profitable results, we shall not have to deplore waste of money on ships like the "Guichen" and her sisters, which are only fit for the one duty.

There is another reason why we should only build armoured cruisers of a high fighting value, to which we have already drawn attention in the case of battle-ships. It is necessary that these cruisers should be manned by more highly-trained gunners and engine-room staffs, even than battle-ships, because the management of the engines and the working of the guns are more difficult in them than in the last-named.

In all that concerns the engines and boilers there must be no room for any doubt as to their efficiency. The regulation of the stoking in view of high speed, especially when it is a matter of maintaining it for some time, is not easy. The very fast mail-steamer can only keep up their speed by having stokers very highly trained in the special kind of stoking required. A change of stokers in a ship is quite sufficient to affect her speed materially, until her new *personnel* have acquired the same amount of knowledge and experience that their predecessors had.

Similar considerations apply to the management of the machinery. In war-ships this is a more delicate matter than in the high-speed mail-steamer. In the latter the desired speed is always the same, and the necessary measures can be taken from the first to maintain it during the voyage, all the parts of the machinery being specially regulated to this end. In war-ships, however, it is quite different. As there are no receipts to compensate for the expenses, it is necessary in normal times that these must be kept down as much as possible. A cruiser constructed to steam 20 knots, and which has made this without trouble at her trials, will rarely do this when commissioned. During the manœuvres and

ordinary peace duties her speed rarely exceeds 12 to 15 knots, in order to avoid expense in coal, etc., which the maintenance of her trial speed would require. In time of war even, she will only use her full speed when absolutely obliged to do so, and she would then, suddenly, have to pass from her ordinary cruising speed to the unaccustomed high speed. If the stokers and engineers are not sufficiently well-trained and intelligent to make up for the want of experience, it is easy to see that we shall have errors in stoking and in the adjustment of the machinery. We doubt if there is in any fleet, any ship, either battle-ship or cruiser, which has come up during a commission to her measured mile speed.

If it is necessary in high-speed cruisers to have specially selected engineers and stokers, it is no less necessary that they should have picked gunners; for the less steady the ships are as gun platforms, the more difficult it is to make good shooting with her guns. Now we know already that, as compared with battle-ships, cruisers are not steady gun platforms; they knock about in a sea which has no effect on battleships, so it is all the more necessary that their gunners should be as skilled and as apt in their work as possible.

It is sufficiently evident that the more we increase the number of our cruisers, the more difficult it will be to find the select *personnel* so urgently required in the engine-room and stokeholds and for the guns of these ships. Instead, therefore, of increasing indefinitely the number of these ships, we must make each unit as perfect a fighting machine as possible. There will be a double advantage for us in this: firstly, we shall be able to man them well much more easily; and, secondly, we shall save money considerably, because the cost of maintenance of a first-class ship is considerably less than that of two second-class ones. The annual expense for maintenance of a 12,000-ton cruiser, for example, is not very much more than the cost of the 7,500-ton cruiser of the "Desaix" class, whose fighting value is certainly considerably less.

NUMBER OF ARMOURED CRUISERS THE FRENCH FLEET REQUIRES.

Summing up, we can only arrive at the conclusion that for our armoured cruisers, as for our battle-ships, our Navy must lay greater stress on the fighting values of the units rather than on their number.

The Superior Council of the Navy are of opinion that twenty-four vessels of this class will be sufficient; we will accept that view on condition that each of the units shall have the highest fighting qualities which can be attained at the time they are laid down.

This, unfortunately, is not the method which has been adopted in regard to the eighteen units, which have been completed and are building. So we are of opinion that we ought not to limit to five the number of first-class cruisers provided for under the 1900 programme. After these are finished we must proceed to lay down others, more powerful still if it is possible, so as to replace, little by little, those units which do not come up to the requirements of naval war, either for want of speed, offensive power, or protection. Under this classification must be included the following seven armoured cruisers, viz., the "Dupuy-de-Lôme," "Chazey," "Pothuau," "Latouche-Tréville," "Amiral-Charner," "Briuix," and "D'Entrecasteaux."

NAME.	NATURE OF SHIP.	Displace- ment in Tons.	Speed on Trials. Knots.	Complement.		Annual Cost of Maintenance.	
				Officers.	Men.	In full Commission.	2nd Category of the Reserve.
Tagle ...	Protected Cruiser, first class ...	7,589	19	22	435	Frances. £ 938,631 = (37,545 5)	259,988 = (10,359 18)
Jean-Bart ...	" " second class ...	4,109	18	20	356	683,383 (27,335 7)	177,061 (7,082 9)
Suchet ...	" " third class ..	3,416	20	20	328	650,943 (26,037 15)	152,525 (6,101 0)
Lavoisier ...	" " " "	2,322	21·5	11	264	498,070 (17,522 17)	129,006 (5,160 5)
Forbin ...	" " " "	1,966	20·6	11	190	353,958 (14,158 7)	95,902 (3,836 2)
Guichen ...	Protected Destroyer (Commerce De-	8,282	23·6	25	580	1,033,860 (41,354 8)	266,380 (10,655 4)
Jurien de la Graviere ...	Corsair ...	5,686	23	23	442	899,857 (34,794 6)	198,988 (7,959 11)
D'Entrecasteaux	Armoured Cruiser ...	8,123	19	22	538	964,942 (38,533 14)	266,300 (10,652 0)
Dupuy-de-Lôme	" " "	6,783	19·7	20	470	834,435 (33,377 8)	225,692 (9,927 14)
Chanzy ...	" " "	4,812	17·8	16	378	659,644 (26,386 16)	181,848 (7,273 18)
Jeanne d'Arc ...	" " "	11,329	23	34	580	1,152,772 (46,110 18)	245,108 (9,804 6)
Condé ...	" " "	10,000	21	25	590	1,089,342 (43,573 14)	242,404 (9,696 3)
Montcalm ...	" " "	9,517	21	25	540	1,004,136 (40,365 9)	228,624 (9,148 19)
Dupleix ... *	" " "	7,710	21	25	540	957,763 (38,310 10)	215,540 (8,621 12)
Léon Gambetta...	" " "	12,550	22	33	650	1,238,341 (49,533 13)	270,648 (10,825 18)

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Léon Gambetta...	" " " "	12,550	22	33	650	1,238,341 (49,533 13)	270,648 (10,825 18)

The accompanying table enables us to compare the annual expense for maintenance of the principal types of our protected and armoured cruisers, both when fully commissioned, and when in the second category of the Reserve, the stage in which they should be ready for sea eight or ten days after the order to commission has been given. Under the heading of "Annual Cost of Maintenance" is included all the charges for the pay, etc., of officers and men, clothing, provisions, and coal.

The charge for coal is calculated on the following basis: first, the coal expended in harbour for the auxiliary engines, cooking, etc.; then the amount of coal which would be consumed during five or six days' steaming a month at economical speed, that is, 10 knots for battleships and 14 knots for cruisers. If we are calculating for a ship going to a foreign station, the cost of the coal for the voyage out and home at economical speed must also be added. It will be seen by these details that in the table we have given, no account has been taken of the coal expended, etc., by the cruisers when steaming at full speed, or when they make, as they would in time of war, long ocean cruises. The expenditure of coal then mounts up very rapidly, especially in the case of ships of large displacement with very powerful engines.¹

FRENCH AND FOREIGN CRUISERS.

At the beginning of 1902 we had completed and under construction: Thirty-three protected cruisers, of which three ("Guichen," "Châteaurenaud," and "Jurien de la Gravière") steam 23 knots, and have a displacement, the first two of 8,000 tons, the last of 5,700. The remaining thirty may be divided into three classes: three first-class (6,000 to 8,000 tons and 20 knots), fourteen second-class (3,000 to 5,000 tons and 18 to 20 knots), thirteen third-class (2,000 to 3,000 tons and 18 to 20 knots). All these ships are complete for service. Nineteen armoured cruisers, seven of which have a displacement of from 4,000 to 6,000 tons, with a speed not exceeding 19 knots; twelve building, with a displacement of from 7,000 to 11,000 tons, and a speed of 21 knots. At the end of 1906 we shall have, in addition, five 12,550-ton armoured cruisers, of the 1900 programme, which will have a speed of 22 knots.

English Cruisers.—At the same date, only counting ships actually ready for service or being constructed, England had:—One hundred and thirty protected cruisers, twenty of which are of the first-class, with a displacement of from 7,000 to 14,000 tons; fifty-three second-class, displacing from 3,400 to 5,600 tons; and fifty-six, displacing from 1,500 to 2,500 tons.

Fourteen armoured cruisers, four of which have a displacement of 14,100 tons, with a speed of 23 knots (22 knots sea); six of 12,000 tons, and a speed of 21 knots; ten of 9,800 tons, and 23 knots (21 knots sea).

The superiority in cruisers of our rivals is incontestably very great, if one considers only the number of units; but to appreciate her real superiority, we must take into account the very great importance of her interests all over the world, and the enormous number of her merchant-ships sailing in every sea.

¹ See note on page 1040 September JOURNAL relating to consumption of coal at various speeds.

If one analyses with care all the duties imposed on the English fleet by the various interests which it is incumbent upon her to defend, one is led to believe that in 1907 her situation will not be so very superior to ours, as to give us cause for anxiety. In any case, even after making allowance for all the duties which our cruisers may be called upon to carry out in European waters, we think that by 1907 we shall have a sufficiently large number over, which can be used to run down merchant-ships, whether it be in the Channel, Mediterranean, or in distant seas.

The Cruisers of the Triple Alliance.—Germany, at the beginning of 1902, only possessed two armoured cruisers completed and two under construction; she had, in addition, twenty-eight protected cruisers, completed, and four building, and she intends, it appears, to construct yet another forty for foreign stations. She has, in addition, seventeen non-protected ones. The greater number of these ships are of small displacement.

Italy possesses six armoured cruisers, of which only three are of from 7,000 to 8,000 tons displacement; and she has, in addition, sixteen protected cruisers and seven unprotected. In case of war with the Triple Alliance, we could not neglect these cruisers, because the Alliance will be able to dispose actually of ten armoured and fifty-three protected cruisers of only 1,000 tons.

LIST OF THE GERMAN, ITALIAN, AND AUSTRIAN CRUISERS AT THE COMMENCEMENT OF 1902.

	Germany.		Italy.		Austria.		Recapitulation		
	Built.	Building.	Built.	Building.	Built.	Building.	Built.	Building.	Total.
<i>Armoured Cruisers:</i>									
From 10,000 to 11,000 tons ...	2	2	—	—	—	—	2	2	4
8,000 " 9,000 "	—	—	—	—	—	—	—	—	—
7,000 " 8,000 "	—	—	2	1	—	1	2	2	4
6,000 " 7,000 "	—	—	2	—	1	—	3	—	3
5,000 " 6,000 "	—	—	—	—	1	—	1	—	1
4,000 " 5,000 "	—	—	1	—	—	—	1	—	1
Total ...	2	2	5	1	2	1	9	4	13
<i>Protected Cruisers:</i>									
From 6,000 to 7,000 tons ...	1	—	—	—	—	—	1	—	1
5,000 " 6,000 "	5	—	—	—	—	—	5	—	5
4,000 " 5,000 "	3	—	—	—	2	—	5	—	5
3,000 " 4,000 "	—	—	5	—	—	—	5	—	5
2,000 " 3,000 "	7	3	9	—	3	—	19	3	22
1,000 " 2,000 "	12	—	2	—	4	—	18	—	18
Total ...	28	3	16	—	9	—	53	13	56

(To be continued.)

NAVAL NOTES.

HOME.—The following are the principal appointments which have been made: Rear-Admirals—J. Durnford, C.B., D.S.O., to command of Cape of Good Hope Station; Angus MacLeod to be Senior Officer on the Coast of Ireland; W. Des Vœux Hamilton to be a Rear-Admiral in the Mediterranean Fleet. Captains—A. L. Duff to "Albemarle"; A. J. Pocklington to "Pembroke"; R. G. O. Tupper to "Venus"; C. H. Cochran, M.V.O., to "Indus"; F. C. D. Sturdee, C.M.G., M.V.O., to "Bedford"; F. E. Brock to "Donegal"; F. F. Fegen, M.V.O., to "Centurion"; H. P. Routh, M.V.O., to command of Eastern Coastguard District. Commanders—Sir D. E. Brownrigg, Bart., to "Fire-Queen"; H. H. Bruce to "Medea"; C. W. S. Leggatt to "Calypso"; C. G. Chapman to "Osborne."

Admiral Sir C. Bridge, K.C.B., Commander-in-Chief in China, Vice-Admiral A. D. Fanshawe, Commander-in-Chief on the Australian station, and Rear-Admiral G. Atkinson-Willes, Commander-in-Chief in the East Indies, arrived at Singapore in their respective flag-ships in the early part of last month, for the purpose of holding what is believed to be the first of a regular series of annual meetings, to discuss certain strategical questions relating to possible concentrations and combined operations on the part of the squadrons of the three stations; the actual meeting place of the three Admirals was at Kuala Johore, some twelve miles from Singapore. Vice-Admiral Fanshawe and Rear-Admiral Atkinson-Willes, left Singapore on the 14th ult. to return to their respective stations.

Rear-Admiral W. Des Vœux Hamilton has been appointed as an additional Rear-Admiral in the Mediterranean Fleet; he will hoist his flag on board the new first-class battle-ship "Albemarle," which commissioned on the 12th inst., and will relieve the "Repulse" on the station.

The first-class battle-ships "Cæsar" and "Ramillies," both from the Mediterranean, paid off at Portsmouth on the 6th and 7th ult. respectively. The new first-class battle-ship "Duncan" commissioned at Chatham on the 8th ult. for the Mediterranean, and left on the 24th ult. for her destination; the "Duncan" takes the place of the "Cæsar" on the station. The first-class battle-ship "Goliath," recently returned from China, paid off on the 8th ult. at Chatham. The second-class cruiser "Highflyer," lately flag-ship in the East Indies, arrived at Plymouth on the 22nd ult., and will pay off at Devonport. The first-class battle-ship "Centurion" commissioned at Portsmouth on the 3rd inst. for service in China; she will be an additional ship to the strength on the station, for which she left on the 10th inst. The second-class cruiser "Arrogant" commissioned at Devonport on the 3rd inst. to relieve a sister-ship, the "Vindictive," in the Mediterranean. The new first-class armoured cruiser "Donegal" commissioned on the 5th inst. at Devonport, for the Cruiser Squadron, taking the place of the second-class cruiser "Rainbow," whose officers and men turned over to her, after paying that ship off on the 4th inst. The new first-class cruiser "Bedford" commissioned on the 11th inst. at Devonport for the Cruiser Squadron,

relieving the second-class cruiser "Minerva," whose officers and men turned over to her, after paying off on the 10th inst. The "Rosario," sloop, has been transferred from China to Australia, where she relieves the torpedo-gun-boat "Karrakatta," which is to return to England for extensive repairs. The third-class cruiser "Psyche" left Plymouth on the 5th ult. for Australia, where she relieves the third-class cruiser "Archer." The third-class cruiser "Tartar" commissioned at Chatham on the 28th ult., to relieve the sloop "Nymphe" on the South Atlantic station. The third-class cruiser "Barrosa" commissioned at Devonport on the 20th ult. for service on the Cape station, and left on the 31st ult. for her destination, where she will relieve the "Barracouta," a sister-ship.

Collision Between the "Hannibal" and "Prince George."—A collision took place on the night of the 17th ult. between the first-class battle-ships "Hannibal" and "Prince George," of the Channel Fleet. The mishap took place about 10 p.m., when the ships were manœuvring without lights, the "Hannibal" striking the "Prince George" on her port quarter. The weight of the blow was chiefly felt at the aft submerged torpedo-flat; the hole made in the side being of the same dimensions as the ram of the "Hannibal," the rent extending in diminishing width up to the gun-room; all the cabins on the same deck as the torpedo-flat being swamped. There are two drains in the submerged torpedo-flat, and an effort was made by means of these drains to pump the water from the flat into the engine-room, where there was sufficient pumping power to eject 5,000 tons of water an hour. The inflow, however, was altogether inadequate to the capacity of the pumps, and it was, therefore, determined to shut off the drains and keep the torpedo-flat full of water. Meanwhile, the water-tight doors were closed and shored up to give them additional strength. The "Prince George" then proceeded under her own steam to Ferrol harbour, where Lord Charles Beresford superintended the work of salvage. As soon as the ship was anchored, the ship's divers were sent down to plank up the hole from the outside, and the rapidity and success with which they worked well deserved the warm eulogies of the Vice-Admiral. The ship was struck on the night of the 17th; on Monday all the water was pumped out of her; on Tuesday the hole was planked up on the inside, and every crack and crevice was caulked; on Sunday, October 25th, she left Ferrol for Portsmouth, steaming at 13 knots all the way. The whole of the work was performed by the ship's company, and so effectually that very little water leaked through the planking.

The "Belleisle" Experiments.—With the view of testing the effect of the explosion of a Whitehead torpedo against a ship's bottom, an important experiment was carried out at Portsmouth on September 4th against the "Belleisle," which was moored in Porchester Creek for the purpose. As the result of the explosion the ship heeled over and sank in twenty minutes. A compartment had been built outside the port bow below the water-line, and this compartment was filled with corn-pith cellulose. At the time of the experiment there were 10 feet of water under the keel of the ship. A Whitehead torpedo was lashed by divers under the compartment, and the torpedo was fired from the "Vernon" by means of an electric circuit. No sooner was the torpedo exploded than—as seen from a distance of less than a mile—a spray that rose to an approximate height of 40 feet was sent into the air, and the ship immediately gave a heavy list to port. The force of the explosion had

not only smashed the special compartment, but had blown the whole of the cellulose into the air, and, simultaneously, the concussion had so violently torn open the side of the ship that the water rushed in with considerable force. It had been determined in the event of the cellulose's effectually plugging the breach to take the ship back to the dockyard for inspection, but so rapid was the heeling over that three tugs were employed in pushing the "Belleisle" towards the shore, where she sank in 20 feet of water on the mud in Bomb Ketch lake. The rapidity with which she sank is conclusive evidence of the destructive power of the torpedo, while the instantaneous discharge of the cellulose into the air disproves the theory as to its plugging capacity. The ship was floated and docked at Portsmouth on the 8th ult.

The experiment was one of the most important that has ever been carried out with the Whitehead torpedo, as the ship had been so stiffened as to be stronger below the belt than any seagoing war-ship; but, on the other hand, by way of compensation, the torpedo was specially favoured. The compartment built outside the ship was about 2 feet in beam, and this was filled with corn-pith cellulose; next to this compartment came the skin of the ship; between the skin of the ship and the boiler-room were six longitudinal bulkheads, and these were intersected by a transverse bulkhead extending from the boiler-room to the skin of the ship. Two of the longitudinal compartments had a beam of 3 feet 6 inches, and each was filled with coal. The Whitehead torpedo was lashed under the outer casemate that was filled with corn-pith cellulose, and was electrically fired from the "Vernon." If the conditions did not exactly comply with what would obtain in actual warfare, it will be seen that in the handicapping the ship was given the advantage. As a matter of fact, however, the outside casemate with its cellulose was blown into the air the instant the torpedo was exploded, the bulkheads were shattered, and the decks were so blown up inwards, upwards, and downwards, that not a ton of coal could be found in the original emplacement. The work of destruction in a latitudinal line stopped at the bulkhead of the boiler-room; but the extraordinary radius of the explosion afforded some useful instruction.

When it was found that the ship was sinking in deep water she was pushed by the tugs on to a mud bank, and then the Liverpool salvage crew were called in to save her. Subsequent investigation showed that the hole in the side of the ship measured 12 feet by 8 feet, but by the time the salvage operations began this hole was being so rapidly silted up by the harbour mud that it could not be approached. Some deck plates were therefore blown out, but the divers, when the ship was submerged, found it impossible to go below. The explosion had so forced the bulkheads inwards and caused such jagged edges in the plates that there was no way through which a diver could crawl, and therefore all the work had to be done from the outside. By this time the greater part of the hole had been filled up, and nothing could be done until the mud had been removed. The salvors, therefore, had to employ a dredger, which removed 300 tons of mud. The dredger buckets could not get close alongside the ship, so a hole had to be dug in the bed of the harbour as near to the hole in the ship's side as possible, and then the mud that plugged the hole in the ship's side had to be ploughed into the cavity. Owing to the rapidity of the silting, this was a work of considerable difficulty, as it was only when the mud was kept below the vessel's wound that the shipwright divers could work to any purpose.

Their first object was to plank up the bulkheads nearest the skin of the ship, and then to adopt the same course with the outside plates. Having thus secured a fairly water-tight though water-loaded compartment, their next duty was to pump out the water and put in cement, which, by the action of such percolations as remained, stopped the crevices. Although she was lying on a mud bank, only the top of the conning tower was visible at high water, and when the salvors were ready to use the pumps the tide allowed them only five and a half working hours. Their pumps, however, were equal to a discharge of 3,600 tons an hour, and they then had no difficulty in giving the ship such buoyancy in one tide that she was successfully towed across the harbour and placed in dry dock.

The result of the trial is regarded by the Torpedo School as such a success that the ship is to be brought forward for further torpedo experiments.—*Times, Naval and Military Record, etc.*

FRANCE.—The following are the principal promotions and appointments which have been made : Rear-Admirals—E. M. Richard, J. P. Besson, R. J. Marquis, and J. T. Péphau to be Vice-Admirals; H. L. Manceron to be Head of the Superior School of the Navy; M. De Fauque de Jonquieres to be Second-in-Command of the Squadron in China. Capitaines de Vaisseau—P. B. Fortin, M. A. Massé, P. A. Campion, M. J. Aubert to be Rear-Admirals; A. M. Aubin to "Condé"; A. J. Bouxin to "Iéna"; B. S. Sourrieu to "Pothuau"; P. R. Dufayot de la Maisonneuve to "Charles Martel"; J. Lephay to "Henri IV"; A. V. Adams to "Charlemagne"; F. G. Schilling to "Amiral-Tréhouart." Capitaines de Frégate—G. C. Guiberteau, P. P. Thibault, R. Duval, E. A. Jacquet, R. D. Beausacq, J. P. Bouthet des Gennetières, L. C. Martel, H. A. Calloch de Kérillis, E. E. Gervais to be Capitaines de Vaisseau; C. T. Charlier to "Ibis"; A. H. Nissen to "Bombe"; L. C. Martel to be Chief of the Staff to Rear-Admiral Barnard.—*Journal Officiel de la République Française.*

Vice-Admiral Mallarmé took up his appointment as Maritime Prefect at Brest on the 1st October. Rear-Admiral De Fauque de Jonquieres succeeds the late Rear-Admiral Le Dô as Second-in-Command in China. Rear-Admiral Le Dô, who died at Yokohama on the 3rd October, had been in bad health for some time.

Of the officers newly promoted to Vice-Admiral's rank, the senior, E. M. Richard, is a little over sixty, and has forty-three years' service; as a captain he commanded the East Indian Division, and as a rear-admiral the Atlantic Division; Vice-Admirals Besson and Péphau, who come next, are also both over sixty, the first-named, as a rear-admiral, commanded the Reserve Division in the Mediterranean, and the last has only recently resigned the command of the Second Division of the Northern Squadron; Vice-Admiral Marquis, the junior, is fifty-seven, and as a rear-admiral, commanded a division of the Mediterranean Fleet. Of the four new rear-admirals, Fortin and Massé are both fifty-eight, Campion is nearly fifty-eight, while Rear-Admiral Aubert, the junior of the four, who is promoted over the head of thirty-six of his seniors, is fifty-five, and has thirty-nine years' service. Of the nine new captains, Guiberteau, the senior, is fifty-three and has thirty-seven years' service; two others, Bouthet des Gennetières and Duval, are fifty-four; while Thibault, the youngest, is fifty.

Rear-Admiral Barnard, who succeeds Vice-Admiral Marquis in command of the Second Battle-ship Division of the Mediterranean Fleet, hoisted his flag on board the "Iéna," at Toulon, on the 5th inst.; he is now hoisting his flag for the first time, is fifty-eight next month, and has forty-three years' service.

New Ships and Dockyard Notes.—Cherbourg.—The new first-class cruiser "Kléber" has recommenced her trials; at her four hours' full-speed run her engines developed 17,370-I.H.P., or 370-H.P. in excess of the contract; the coal consumption was 158 kg. (348.23 lbs.) per square metre of grate surface; the speed attained and other details have not transpired; her water-tube boilers are of the Niclausse type. During a six hours' run, with the engines developing nominally 1,500-I.H.P., the H.P. actually developed was 1,564, with a coal consumption of 660 gr. (1.32 lbs.) per H.P. per hour. The new first-class armoured cruiser "Amiral Aube" is also successfully continuing her trials; during a six hours' run at 1,800-I.H.P. the engines actually developed 2,173-H.P., with a coal consumption of 46 kg. (101.38 lbs.) per square metre of grate surface, and 527 gr. (1.05 lbs.) per H.P. per hour, an expenditure well under the contract limit. Owing to the gale and the heavy sea running in the Channel, the twenty-four hours' run on which she had started had to be postponed, the ship returning to port.

Brest.—The new first-class battle-ship "Suffren" has at last completed her twenty-four hours' coal-consumption trial, the engines developing a mean of 9,100-I.H.P.; the engines and boilers, which are of the Niclausse type, worked satisfactorily; if her approaching full-speed trial is successful, she will, on its conclusion, leave for the Mediterranean.

Work is still being pushed on with the "Démocratie," to ensure her being ready for launching in February next, 150 additional men having been added to the already large number employed on her. Her sister-ship, the "République," which was laid down at this yard in December, 1901, and launched on 4th September of last year, should, according to the provisions of the Budget this year, be ready for her trials next October, but it is not likely that she will be really ready until a much later date. She is the first of the six new 14,885-ton battle-ships of the 1900 programme; she and the "Patrie" differ from the other four in armament, as they will carry eighteen 6.4-inch Q.F. guns, whilst the later vessels will mount ten of the new pattern 7.6-inch Q.F. guns and eight 3.9-inch.

The new first-class armoured cruiser "Marseillaise" has been carrying out some additional trials, to test her coal consumption at different speeds. For the first part of these trials, only using the two side engines and six boilers, the engines developed 1,839-I.H.P., a speed of 9 knots was maintained; with all three engines working, 2,264-I.H.P. was developed, giving a speed of 10.5 knots. With the three engines working and twelve boilers, 4,374-I.H.P. was developed, giving a speed of 13 knots, with 82 revolutions; the consumption of fuel (coal and petroleum) being 60 kg. (132.24 lbs.) per square metre of grate surface. With sixteen boilers and the three engines working, the I.H.P. developed was 6,937, with 100 revolutions, giving a speed of 16.5 knots; the pulverisers employed were on the Belleville system.

The Minister of Marine has given orders that the first-class battle-ship "Amiral-Duperré," which is to replace the old "Couronne" as the

gunnery school at Toulon, is to be sent round to that port to be fitted out for her new duties. It was originally intended that the "Amiral-Duperré" should undergo a thorough refit, and be brought up-to-date, as has been done with the "Formidable"; the central barbette, with its obsolete 13·3-inch guns, being done away with, and a casemated battery, protected by 4·5-inch armour, in which four 6·4-inch Q.F. guns were to be mounted, being substituted. Her old cylindrical boilers were also to have been removed and replaced by new ones of a different type, which had already been sent to Cherbourg, where it had been originally intended the ship should have been refitted. It is not known now as to how far these plans will be carried out after her arrival at Toulon, but it is reported that orders have been given for the new boilers to be sent from Cherbourg to Toulon.

Submarines.—The new submarine vessel "Protée" was launched at Cherbourg on 8th October. She is of the "Naiade" type, and has a displacement of 68 tons; her length is 23·50 metres (77 feet), beam, 2·26 metres (7·3 feet); the motive power is electricity provided from accumulators, and is to give a surface speed of 8 knots; the crew will consist of one officer and four men.

The Minister of Marine has given orders for the commencement of six submarines of a new type, three to be built at Cherbourg and three at Toulon. They will have a displacement of 450 tons, which is 200 tons larger than the "Gustave Zédé," which up to the present has been much the largest of these vessels yet built, and the increased dimensions will be utilised in giving a higher speed and greater radius of action, and it is hoped that a speed of 12 knots at least will be attained. They have been designed by Naval Engineer Mangas.

Hardly a month passes without some adverse criticism of the Minister of Marine appearing in the French papers, and the *Temps* now remarks that the interest of this new departure in submarines chiefly lies in that it shows M. Pelletan has quite veered round on the submarine question, having at first spoken unfavourably of submarines and everyone concerned in them, and having countermanded the construction of eleven out of thirteen submersibles ordered by his predecessor—he now seems ready to bless them. Meanwhile, other nations have not been standing still, and these delays and changes of mind on the part of the Minister of Marine have, it is complained, lost to France the lead which she had certainly acquired in this matter over other naval Powers. M. Pelletan appears to have acted entirely on his own initiative, without consulting the officials of the *Direction Technique* of the Navy, whose advice has not been listened to or even asked for.

The English Naval Manœuvres.—M. Pierreval, the well-known naval critic, writing in the *Moniteur de la Flotte*, draws the following conclusions from the execution of the strategic theme, which, however, he explains, are only of a general character, since only those who were actually present are in a position to offer criticism:—

"The maximum speed of the English battle-ship squadrons (and most probably that of the battle-ship squadrons of other Powers) on long sea runs must be considered as much below the trial speed, not one or two knots only, but in the mean four.

"The strategic advantage conferred by a small superiority in speed (one or two knots) can be considered a negligible quantity, when the

enemy knows how to use his cruisers strategically and judiciously. It seems that one must expect, in prolonged operations at a high speed, a certain wastage *en route* from breakdowns, which would be equal to gaps made by an unsuccessful battle. B1 fleet, on arriving at the Azores, would have had to face the enemy, if they had met, with only a moiety of its battle-ships and armoured cruisers. B2 fleet was deprived by circumstances of one of its battle-ships, the 'Ramillies.' X fleet was deprived of its best cruisers, and all this before a single shot had been fired. Public opinion nevertheless, seems to be satisfied in England, in spite of the considerable wastage due to the want of endurance on the part of the *matériel*. In France, public opinion, which is more susceptible, would have taken alarm. Nevertheless, we cannot say that our ships would have done any better, if they had been subjected to any such severe test such as the English fleet had to go through at the late manœuvres, because our squadrons have not as yet been called upon to undergo such long endurance trials.

"It is only logical to anticipate, in all such long runs at high speed in any fleet, probably such wastage that it will be generally impossible for any commander to be certain what force he will actually have present when the moment for battle comes.

"It will be generally impossible for the ships of a squadron to maintain regular station, when the maximum speed has to be brought into play.

"The personnel of the English fleet has given proof of being in a high state of training and efficiency. The way in which the cruisers of X fleet kept in touch with B2 squadron seems to reflect great credit on Rear-Admiral Sir Baldwin Walker and the commanders of the ships employed, in view of the conditions under which the duty had to be carried out. Although the preliminaries of the battle of the Azores show a certain amount of uncertainty in scouting tactics, there is still every indication to show that the English Navy has made a most appreciable progress in the handling of cruisers for scouting purposes."

Commenting next on the battle of the Azores, M. Pierrevval points out that on the morning of the action, Admiral Domvile, with his fleet, seems to have been cut off by the enemy, not only from his base at Lagos, but from the "Exmouth" and his cruisers. He concludes that the absence of the cruisers, at the moment when the enemy was near, and an action imminent, which might render an energetic intervention on the part of these vessels necessary, can only be explained on the supposition that want of coal compelled them to draw back towards the base.

"The objective of Admiral Wilson was to detain, as far as possible, the enemy's fleet, by keeping himself between him and Lagos, and forcing him either to accept battle against superior forces or to retreat westward. Admiral Domvile's objective, on the other hand, was to double on Wilson's fleet to the south, if possible, without fighting, so as to pick up the 'Exmouth' and his cruisers, and be in a position, if he was forced to do so, to engage with all his strength."

The X fleet was faster than B, but it had to describe a curve, of which B was the chord. "Moreover, X laboured under the disadvantage, up to the moment of the two fleets sighting each other, that is, up to 11 a.m., of B being informed of his movements by his cruisers, while Admiral Domvile had to be content with steering to the east without knowing where his opponent was. This circumstance, besides showing once more the immense tactical advantage the side has which is able, either by skill, by force, or by chance, to have a strongly-supporting line of scouts, makes one believe that a cruiser action on the morning in question would

have allowed X fleet to have freed itself from the touch of the enemy's vessels, or at least to have gained sufficient time to have enabled it to pass round the combined fleet. It must not be forgotten that X was weak in cruisers as compared with B.

"From the moment the two fleets sighted each other, up to the moment of opening fire, the struggle was purely tactical. Both commanders-in-chief were much hampered; Admiral Domvile by the 'Cæsar' and 'Illustrious,' which were unable to maintain their stations, except with great difficulty; Admiral Wilson by the whole of the Home Squadron being unable, likewise, to keep station, on account of defective speed.

"At 3 p.m., the respective situations of the two fleets were as follows: Both fleets seemed to have been steering at that time nearly parallel courses towards the south, in line ahead, the B fleet being to the eastward; the 'Bulwark' leading the X fleet, being about 5,000 yards from the 'Majestic,' which was leading the B fleet, when she opened fire. Admiral Wilson had given the order to proceed at full speed, but the Home Squadron was unable to come up and had to open fire at too long a range to make it effective. In the meantime, the four ships at the head of the line, led by Lord C. Beresford, threatened to cut off the rear ships of X fleet; Admiral Domvile, perceiving this, ordered Rear-Admiral Custance to close with the enemy's van at full speed, while he himself at the same time concentrated the whole fire of his fleet upon it; this movement seems to have been entirely successful, and, as far as can be judged from the reports of eye-witnesses, Beresford's division would have been annihilated. At the same time, the 'Cæsar,' 'Illustrious,' and 'Renown,' which were still dropping astern, and in danger of coming under the fire of the whole of B fleet, received the order to turn to starboard in succession, and stand towards the west, and had this order been understood and properly carried out, the three ships would have saved themselves, as their speed was still superior to the division of the Home fleet sent in pursuit. But the signal was read as an order to sacrifice themselves there was hesitation in carrying it out, and in the end the ships were placed *hors de combat*.

"Admiral Wilson had thus succeeded in forcing battle on an enemy's inferior in number, but in the main the brunt of the fighting seems to have fallen entirely on his van, which would probably have been destroyed. Owing to the want of homogeneity in his fleet, he seems to have attained an inverse result to that which he tried to achieve: in place of fighting with superior forces, his van was crushed without the rest of his fleet in rear being able to intervene successfully. By way of retaliation for losing four of his best ships, he destroyed the enemy's three worst.

"Admiral Domvile, in the course of the battle, showed himself a tactician of the highest order. In spite of the way in which some of his signals were carried out, it is impossible to contest the soundness of his plan, the opportuneness of the measures he ordered, the rapidity of conception and the *coup d'œil* which determined them. He lost his three rear ships, but he regained the 'Exmouth,' his cruisers, and his free communication with his base. And if one looks from the point of view of the theme which was set, as to with which side the definitive command of the sea remained, we think that it was with him that victory lay. He lost three ships, but he regained one which he had lost, and, moreover, had destroyed his enemy's best division; he remained in communication with his base, and was in a position to fill up with coal and stores. The result that he obtained was the more remarkable, as the conditions of the battle were extremely advantageous to his adversary.

"There is nothing new to be learnt from the battle of the Azores. The want of homogeneity in squadrons is an almost irremediable weakness, however numerous they may be. When it is necessary to abandon close order and leave fractions of the fleet astern, everything is compromised. In a similar case, a deliberate sacrifice of bad steamers, such as that on which Sir Compton Domvile's resolved, seems preferable to the final breaking up of Sir A. Wilson's fleet, which secured nothing and compromised everything."

"One cannot fail to be struck, in the course of these manœuvres, with the slight importance that English tactics seem to attribute to keeping station in the order of battle. They are still plainly inspired with the impetuous methods of Nelson; to throw, at no matter what cost, the weight of attack against one wing of the enemy. The result of the experiment we have briefly described does not incline us to regard with favour a loose discipline in the matter of keeping station."—*Le Yacht, Le Temps*, and *Le Moniteur de la Flotte*.

GERMANY.—The following are the principal appointments which have been made: Admirals—Von Koester to command of Active Battle Fleet; H.R.H. Prince Henry of Prussia to command of the Baltic Naval Station. Rear-Admirals—Fritze to command of Second Squadron of the Battle Fleet; von Prittzwitz und Gaffron to command of Cruiser Squadron; Graf von Baudissin to be Second-in-Command of Cruiser Squadron; Schmidt to command of Cruiser Division of Battle Fleet; Borcken-hagen to be Director of the Naval Academy; Breusing to be Second-in-Command of First Squadron of Battle Fleet. Kapitäns zur See—Von Holtzendorff to be Second-in-Command of Cruiser Squadron; Schröder to "Vineta," as Commodore in command of Cruiser Division on East Coast of America; Coerper to "Kaiser Wilhelm II."; von Basse to be Captain Superintendent of Dantzig Dockyard; Ehrlich to "Kaiser Karl der Grosse"; Poschmann to be Chief of the Staff of the newly-formed Battle Fleet; Emsmann to "Kaiser Friedrich III."; Gühler to "Prinz Heinrich"; Pohl to "Kaiser Wilhelm der Grosse"; Engel to "Mars."—*Marineverordnungsblatt*.

The New Battle Fleet.—An Imperial edict directs the formation of a fleet, to be termed the "Active Battle Fleet."

In 1890, a Training Squadron, consisting of the old battle-ships "Kaiser," "Deutschland," "Friedrich Karl," and "Preussen," was formed; in the following year a Manœuvre Fleet in addition was temporarily organised. A little later the two were combined into a Manœuvre Fleet of two divisions. In November, 1893, this force was re-named the Manœuvre Squadron; the first division consisted of the four (now third-class) battle-ships "Baden," "Bayern," "Sachsen," and "Württemberg," which were all sister-ships; the second division of the still older battle-ships, "König Wilhelm," "Deutschland," and "Friedrich der Grosse." In January, 1896, it was re-named the First Squadron; the first division then consisting of the four new first-class battle-ships of the "Brandenburg" class, and the second of the "Sachsen" and "Württemberg." In June, 1900, the two-division formation was given up, the rear-admiral in command of the second division becoming the second-in-command of the First Squadron. At the conclusion of that year's manœuvres, a second Active Squadron was formed, and these two squadrons are now merged in the new "Active Battle Fleet." According to the Navy Act of 1898, this fleet will eventually consist of seventeen first-class battle-ships, organised

in two squadrons of eight ships each, with an additional ship as flag-ship; of four large and twelve small cruisers, and forty torpedo-boats. The fleet is now constituted as follows:—

First Squadron.

First-class battle-ships—"Kaiser Friedrich III." (flag-ship of commander-in-chief), "Kaiser Wilhelm II," "Kaiser Wilhelm der Grosse," "Kaiser Barbarossa," "Kaiser Karl der Grosse," "Wittelsbach," "Zähringen," "Wettin."

The Cruiser Division of First Squadron.

First-class armoured cruiser—"Prinz Heinrich."

Second-class cruiser—"Victoria Luise."

Third-class cruisers—"Amazone," "Niobe," "Ariadne," "Frauenlob," "Medusa," "Arcona," "Hela," "Blitz."

First Torpedo-boat Flotilla.

Division-boat—"G 110."

A Division—"G 108," "G 109," "G 111," "G 113."

B Division—"S 102," "S 103," "S 104," "S 105," "S 107."

Second Squadron.

Third-class battle-ships—"Baden" (flag-ship), "Württemberg."

Coast-defence ships—"Hildebrand," "Beowulf," "Hagen," "Heimdall."

Second Torpedo Flotilla.

Division-boat—"S 106."

C Division—"S 114" to "118."

D Division—"S 91" to "S 95."

As the reconstruction of the four ships of the "Brandenburg" class is completed, and the new battle-ships now in hand are finished, they will take the place of the old and small battle-ships now forming the Second Squadron.

Admiral von Koester, the Inspector-General of the Navy, who has been appointed Commander-in-Chief of the new "Battle Fleet," became a full admiral in March, 1897; he has held command of the Baltic station for the last seven years, and since 1899 he has also each year had supreme command of the Manœuvre Fleet, in which year also he became Inspector-General of the Fleet. He has over forty years' service, and is now in his sixtieth year; in 1900 the Kaiser ennobled him, and in 1902 conferred the Black Eagle, the highest decoration in Prussia, upon him. Admiral von Koester hoisted his flag on the 22nd ult. on board the "Kaiser Wilhelm II.," at Kiel, and took over his new command; the flag of Prince Henry of Prussia was struck at the same time on the "Kaiser Friedrich III.," and rehoisted on the tower of the Royal Castle; subsequently Admiral von Koester's flag was transferred to the "Kaiser Friedrich III."

Admiral H.R.H. Prince Henry of Prussia, who now vacates the command of the First Squadron, which he has held since September, 1900, to take over the command of the Baltic Division, has only just entered on his forty-second year. He commanded the squadron in China for two years before assuming that of the Home Squadron; he is one of the best officers in the German Navy, and it is universally admitted that he has

brought the efficiency of the First Squadron during the tenure of his command to a far higher standard than any German fleet has reached before.

Launches.—Two of the new battle-ships have recently been launched. On the 31st ult., in presence of the Kaiser and Kaiserin, the "Preussen" (ex "K") was launched from the Vulcan Yard, Stettin; while on the 22nd September, a sister-ship "Z" was launched from the Krupp-Germania Yard at Kiel, and received the name of "Hessen," the launching ceremony being performed by the Grand Duke of Hesse. The dimensions of the two ships are as follows:—Length, 400 feet 3 inches between perpendiculars, 430 feet over all; beam, 73 feet 6 inches; displacement, 13,208 tons, with a mean draught of 25 feet 8 inches. Protection is afforded by a complete armour belt of Krupp steel, 9 inches thick, tapering to 4 at the extremities; above this is another belt 240 feet long of 6-inch steel, and a central battery 180 feet long above this again, also protected by 6-inch armour. The armoured deck is 1·5 inches thick on the flat, and 3 inches on the slopes; the transverse bulkheads are 6 inches thick. The barbettes for the heavy guns, with their hoods, are 11 inches thick; the small turrets 7 inches; while the fore conning-tower is 12 inches, and the after one 5·5 inches. The total weight of armour is 4,200 tons. The armament consists of four 40-calibre 11-inch guns, in pairs in the barbettes, one forward and one aft; fourteen 40-calibre 6·7-inch Q.F. guns, four in turrets on the upper deck and ten in the casemated battery on the main deck, with twelve 3·4-inch and twelve 1-pounder Q.F. guns, and six torpedo-tubes, one submerged in the stem, two submerged on each broadside, and one above water in the stern. The triple-expansion engines, to drive three screws, are to develop 16,000-I.H.P., to give a speed of 18 knots. There are two sets of boilers, six cylindrical, and eight water-tube of the Schultz type. The normal coal supply will be 1,000 tons, but 1,500 can be carried on an emergency, with 200 tons of oil. The "Preussen" and "Hessen" are of the improved "Wittelsbach" class; and a third ship, "M," will soon be ready for launching, which is being built at the Schichau Yard, Dantzig.

Three third-class cruisers, of the improved "Undine" class, have recently been launched, the "Bremen" on July 9th from the Weser Yard at Bremen; the "Hamburg" on July 25th from the Vulcan Yard, Stettin; and the "Berlin" on September 22nd from the Schichau Yard, Dantzig. The dimensions of these vessels are as follows:—Length, 361 feet; beam, 40 feet 4 inches, with a draught 16 feet 5 inches on a displacement of 3,200 tons. The two triple-expansion engines are to develop 10,000-I.H.P., giving a speed of 22 knots; there will be ten Schultz water-tube boilers, with a pressure under forced draught of 15 atmospheres. The coal stowage will be 800 tons, giving a radius of action of 5,000 miles at 10 knots. There is an armoured deck 1 inch thick on the flat and 2 inches on the slopes, with a 3-inch conning-tower. The armament will consist of ten 4·1-inch and twelve 1·4-inch Q.F. guns, with two submerged torpedo-tubes for 18-inch torpedoes.

A Criticism of the latest German Battle-ships.—Graf von Reventlow, in *Ueberall*, criticises the tactical and fighting qualities of the five new battle-ships of the "Braunschweig" class, and he comments unfavourably upon their small displacement of only 13,200 tons, as compared with the 16,300 tons of the new English ships of the "King Edward VII." type, the 16,300 tons of the new United States battle-ships, and the nearly 15,000 tons of the new French ships of the "République" class. Two years ago, in the writer's opinion, the German ships of the "Kaiser" and

"Wittelsbach" types, although only of between 11,000 and 12,000 tons, did not compare unfavourably with foreign vessels, and this was due to the advantage they at that time undoubtedly had in the heavy 9·4-inch guns of these ships being quick-firers, and to their large secondary batteries of eighteen 5·9-inch Q.F. guns; but this advantage no longer holds good, owing to the improvements as regards rapidity of fire made during the last two years in the heavy guns of other countries, and the "Wittelsbach" and her sisters, representing the latest work of the German dockyards, with their 9·4-inch and 5·9-inch Q.F. guns, are faced by the "King Edward VII." and sister-vessels armed with 12-inch and 9·2-inch guns, possessing as great a rapidity of fire as the German weapons. It is a fact to be deplored, but it is one which has to be borne in mind when estimating our naval strength.

The case is different, however, with the ships of the "Braunschweig" class. The 28-cm. (11-inch) gun, with which these ships are to be armed, is, in the opinion of German artillerists, quite equal to the 12-inch gun of other Powers, when other factors are taken into consideration besides mere calibre, such as the size and composition of the powder charge, the length of the combustion chamber, the nature of the projectile, etc.; moreover, the gun weighs less, a distinct advantage.

The secondary armament of the "Braunschweig" class consists of fourteen 6·7-inch Q.F. guns, in place of the eighteen 5·9-inch guns of the earlier ships, and this 6·7-inch gun is quite the equal of the English 7·5-inch and the United States 7-inch guns, but they are inferior to the 7·9-inch to 9·2-inch guns now being mounted in some of the English, Italian, and United States ships, which can penetrate the armour protection of the German secondary batteries at longer ranges than is possible for the German gun. This puts the German ships at a disadvantage which cannot be denied. On the other hand, in the foreign ships named there is the disadvantage of having heavy and medium guns of three different calibres to provide for, when arranging for the ammunition supply, whereas in the German ships there are only two; in rapidity and command of fire the German guns are also superior while the heavier weight of the foreign guns is one of the principal causes of the growth of displacement. This greater displacement has not, however, given the "King Edward VII." a thicker armour belt, nor are the turrets for the heavy guns of the United States "Connecticut" so well protected as in the "Braunschweig," although the casemate armour of the latter ship is certainly much weaker—a fault which the writer hopes to see remedied in the next ships to be constructed. He then proceeds to briefly discuss the question whether it is not better to have five ships of 13,000 tons in preference to four of 17,000, especially as in the 13,000-ton ships great offensive power can be combined with good defensive qualities, as in the case of the "Braunschweig," and points out that in a battle between the five ships and the four, if one of his five is put out of action he only loses one-fifth of his force, while if one of the enemy's ships is *hors de combat* he loses a fourth. He seems, however, to come to the conclusion that it would be advisable to increase the displacement of the German ships to 14,000 tons, and he would like to see the bows protected by 4-inch armour above the belt, and the thickness of the casemate armour also increased. It is, however, of interest to remark, he points out, that in all the increase in displacement, only thirty to forty per cent. of the increase is available for improvements: as for example, where the displacement is raised from 13,000 to 15,000 tons, a maximum of 800 tons

only is available for increased armour, guns, coal stowage, etc.—*Neue Preussische Kreuz-Zeitung* and *Ueberall*.

UNITED STATES.—*Turbines for the Navy.*—The following is the letter of Rear-Admiral George W. Melville, retired, to the Secretary of the Navy, written under date of 6th August, 1903, prior to his retirement as Chief of the Bureau of Steam Engineering, in regard to steam turbines:—

"Sir,

1. I respectfully recommend that one of the new vessels of the Navy, of not over 5,000 tons displacement, and, preferably, of the scout or very fast cruiser class, be fitted with steam turbines instead of reciprocating engines.

2. My reasons for this recommendation are that the steam turbine has now passed beyond the experimental stage, and various vessels in which it has been fitted, particularly fast passenger steamers, have proved eminently successful.

3. The first advantage claimed for the turbine by its builders is that the engine-room weights will be very materially cut down. Now though this is true, it is so to a less extent than often supposed, since the same boilers, condensers, pumps, and other auxiliaries have to be used in either case and the saving is only in the weights of the motor or engine itself and the shafting and propellers; still, this saving will be, in the case of a high powered vessel, a matter for serious consideration when choice of machinery is made. In my opinion, however, there are other advantages in the use of the turbine even more important than the saving of weight, and some of these are as follows:—

4. A steam turbine is, as is well known, both in theory and design, the simplest of all motors, consisting only of a revolving shaft, on which is keyed a drum carrying the moving arms or vanes, inclosed in a cylinder containing the stationary arms, and having at each end a bearing in which the shaft and drum revolve. Steam enters at one end of the cylinder, blows through the vanes or arms, and then emerges at the other end and is conveyed to the condenser by the exhaust pipe. The two bearings at the ends of the cylinder for the shaft are the only bearings or rubbing parts in the motor, and as there are no valves, valve gear, nor reciprocating parts to wear loose, get adrift, or require attention and lubrication, but little care is required after the turbine is started; there will be no steam leakage caused by packing rings breaking or wearing loose with consequent increase of coal consumption; if the boilers prime, one of the most frequent causes of breakdowns in a reciprocating engine, no damage will be done, since the wet steam, or water, or spray will simply blow through.

5. The principal objection heretofore raised against the use of the turbine has been that it is very wasteful of steam and must be run at an excessively high speed of revolution. Now, though this may have been true formerly, it is not so at present, since carefully conducted experiments have shown that the improved turbine of to-day will develop its power on as low a consumption of steam as the best reciprocating engine when both are running at their designed power; when both are running at reduced power the steam consumption per H.P. increases very rapidly but no more rapidly with the turbine than with the engine. Turbines, too, as at present designed, can be run at their highest economy at very reasonable speeds of revolution.

6. It should also be particularly emphasised that whatever may be the economy of a turbine when first installed, the turbine will continue to

work with the same economy almost indefinitely, since there are no interior parts to wear loose and allow steam to blow through to the condenser without performing its share of work.

7. Another point, that appeals very strongly to the engineer, and may affect the efficiency of the ship at a critical time, is that as there are no internal rubbing parts no internal lubrication will be required; this means that there will be no cylinder oil to work into the condenser and coat the boiler tubes, with consequent pitting and overheating of fire surfaces.

8. With a turbine little or no care or precaution is required in starting or reversing, and these operations can be performed as rapidly as the necessary valves can be manipulated.

9. Turbines are now reversed by means of a supplemental set of reversing blades and nozzles, to which steam is admitted when desired.

10. As the propellers used with turbines are smaller than those with reciprocating engines, the tips of the upper blades will be more deeply immersed and less likely to be uncovered by the pitching of the vessel, so there will be less possibility of racing. But even if racing does occur, there will be no risk of serious injury or breakdown as with a reciprocating engine.

11. There will be little or no vibration caused by the turbine, and the vibration from the propellers will be greatly decreased by reason of their smaller size. This absence of vibration and perfect balance of the parts will allow much lighter engine platforms to be used.

12. The absence of all interior rubbing parts will allow highly superheated steam to be used, which cannot be done satisfactorily with the reciprocating engine; this in turn will add greatly to the economy of the turbine. As most water-tube boilers are well adapted to the use of superheaters, it is very probable that the introduction of turbines will quickly be followed by the use of superheaters for marine work.

13. As each turbine has but two bearings, there is nothing to get out of line in the turbine itself; in the case of a reciprocating engine there are generally four main bearings that must be kept in perfect alignment and reciprocating parts that must be kept in right angled alignment with the main bearings. As the turbine would have but two bearings, any working of the vessel would not disturb it and could only tend to throw it out of adjustment with the line shaft; this tendency, however, would be no greater than is now the case with the engine.

14. The absence of all working parts except a few of the very simplest description, and especially the absence of linkages and interior rubbing parts in the steam spaces, reduces the cost and labour of upkeep to the minimum; this, though important, is not so important in the case of a naval vessel as is the liability to keep the sea almost indefinitely without laying off the engine for repair.

15. The lubrication of a turbine is almost ideal, since the absence of adjustable bearings permits forced lubrication without appreciable loss of oil or any of it being carried into the condenser by the exhaust. The same oil can be pumped through the bearings over and over again, being cooled in passage by a water coil.

16. Many additional reasons for the use of the steam turbine might be given, but my desire has been to make this letter as short and concise as possible; I believe, however, that the preceding will be more than sufficient to justify my recommendation. The ability to use highly superheated steam, the few moving parts, and the ease of manipulation are alone sufficient to warrant its use.

17. It will also be noted that I have only recommended the use of a turbine in a vessel of moderate size. This is not because I have no faith in it, but because I do not consider it good policy to change the type of motive machinery of battle-ships and large cruisers till after long and exhaustive trials and experience with the new motor in vessels of smaller size and less importance.

18. As this is a matter of great importance, I respectfully request that it be referred to the Board on Construction for consideration. Very respectfully,

GEO. W. MELVILLE,

Engineer-in-Chief, U.S.N., Chief of Bureau."

The Naval Board on Construction has approved the recommendation made by Rear-Admiral Melville that a trial be made of the new turbine engines in a scout ship, and if the suggestion meets with the favour of Secretary Moody, Congress will probably be asked for an appropriation of 300,000 dollars for the construction of a ship of about 5,000 tons, to be equipped with turbine engines of the approved pattern. Plans for a scout ship of the required size have been drawn and have received the approval of the Board on Construction.—*U.S. Army and Navy Journal*.

MILITARY NOTES.

PRINCIPAL APPOINTMENTS AND PROMOTIONS FOR OCTOBER, 1903.

Lieut.-General Sir A. Hunter, K.C.B., D.S.O., from commanding the Scottish District, to be a Lieut.-General on the Staff in India. Lieut.-Colonel and Brevet Colonel R. Bannatine-Allason, from the Royal Artillery, to be A.A.G. at Head Quarters and is granted the substantive rank of Colonel in the Army. Colonel A. W. McKinstry, from commanding 17th Regimental District, to be Commandant, The Duke of York's Royal Military School. Colonel A. W. Collard, from Director of Supplies IIIrd Army Corps, to be a Colonel on the Staff and Director of Supplies, Woolwich Dockyard. Lieut.-General Sir C. Tucker, K.C.B., to be a Lieut.-General on the Staff. Lieut.-Colonel C. G. M. Fasken, I.A., to command a Brigade of the Somaliland Field Force, graded as a Colonel on the Staff, and is granted the local rank of Brigadier-General whilst so employed. Lieut.-Colonel J. C. Swann, I.A., from Base Commandant, Somaliland Field Force, to command the Lines of Communication, graded as Colonel on the Staff, is granted the rank of Colonel whilst so employed. The Rev. W. S. Randall, Chaplain to the Forces, Second Class, to be Chaplain to the Forces, First Class. Colonel C. H. Bridge, C.B., C.M.G., retired pay, to be an Assistant Inspector, Remount Department, on re-organisation. Colonel H. N. Bunbury, from Director of Transport, to be a Colonel on the Staff and Director of Supplies and Transport, IIIrd Army Corps. Lieut.-General G. H. Moncrieff to be Colonel of the Royal Scots (Lothian Regiment). Lieut.-Colonel and Brevet Colonel W. J. Kirkpatrick, C.B., from h.p., to be Colonel to command the 11th Regimental District (The Devonshire Regiment). Lieut.-Colonel and Brevet Colonel E. B. Coke, from h.p., to be Colonel on the Staff for Royal Artillery, with the substantive rank of Colonel in the Army. Colonel (temporary Brigadier-

General) H. J. Scobell, commanding 1st Cavalry Brigade, 1st Army Corps, is granted the rank of Major-General in the Army. Colonel J. K. Trotter, C.B., C.M.G., from an A.Q.M.G., to be Deputy Director-General of Mobilisation and Military Intelligence. Lieut.-Colonel and Brevet Colonel A. L. Bayley, from h.p., to be Colonel to command the West India Dépôt. Colonel H. W. Duperier to be Director-General of Military Works in India, and is granted the temporary rank of Major-General whilst so employed. Colonel Sir F. Howard, K.C.B., C.M.G., A.D.C., from h.p., to be Inspector-General of Recruiting, with the rank of Major-General in the Army. Lieut.-Colonel and Brevet Colonel E. H. Walker, from Chief Inspector, A.O.D., to be a Colonel on the Staff, and to have the substantive rank of Colonel in the Army. Major-General T. Phillips to be Colonel of the 14th Hussars. Lieut-General and Hon. General H. R. Browne, from the Dorsetshire Regiment, to be Colonel of the Norfolk Regiment. Major-General M. W. E. Gosset, C.B., to be Colonel of the Dorsetshire Regiment.

AUSTRIA-HUNGARY.—*The Manœuvres in Hungary.*—Since the introduction of Grand Manœuvres in the Austro-Hungarian Army, these exercises are the first of this nature at which the Emperor has not himself personally assisted. His place was taken this year by the heir apparent, the Grand Duke Francis Ferdinand. Independent of that circumstance, there was nothing abnormal in these manœuvres. The two Army Corps, the VIIth and XIIth, have regularly opposed one another for the last ten years, between Banfy-Hunyadi and Buzias, and the manœuvre ground has been thoroughly well-known since the Imperial Manœuvres in 1884. As has been the case for the last eight years, the manœuvres were under the chief direction of the chief of the general staff, Lieut-General Baron von Beck.

All the measures for organisation were taken, as usual, in strict conformity with realistic conditions, that is to say, so as to leave the greatest possible independence to commanders, and so that the carrying out of the manœuvres would not be impeded by considerations regarding the shelter, rations, etc., of the troops. The staffs and the chief commands were completed and brought to the normal war effective; the establishments laid down for army corps in the field were brought up to their proper war footing, and the troops armed and equipped as for war. The rationing and supply of ammunition were also carried out as in war. The field ovens, which are most practical, and which have been experimented with for many years, were attached to the VIIth Army Corps. They were horsed by requisitioned horses, and provided with their complete matériel; these ovens were used regularly for the first time, and gave every satisfaction. The medical service was also organised as in war, but with a reduced personnel and matériel. Citric acid was again issued to the men, to improve the drinking water, as well as filters (Berkefeld) to the division hospitals.

Trials of military automobiles, also commenced some years ago, were continued, and gave even better results than before. Motor carriages and trucks were used by the higher commanders, and by the army corps. The carriages provided by the firms of Daimler and Spitz were distributed to the director of the manœuvres and the two army corps commanders. The benzine truck, from the "Union" manufactory at Nuremberg, and the steam truck, from the Wyner firm, were distributed to the VIIth Army Corps. In addition, two-wheeled motor cycles were, for the first time, used for the transmission of orders and reports. Ordinary cyclists, infantry and cavalry telegraph patrols, and telephone and balloon detachments were, as before, attached to the staffs of the two army corps.

Without entering into details regarding the general and special schemes, and of their execution by the army corps concerned, it will suffice to simply mention that the manoeuvres were carried out without any special incidents, in favourable but very hot weather, and ended on the 7th September, at 9 a.m. This year, as before, the regular manoeuvres commenced with a general cavalry action. The collision between the two main bodies took place on the third day. The fourth day, Sunday, the 6th September, was a day of rest. On the 7th, the last day of the manoeuvres, the Commander of the VIIth Army Corps deployed his columns for an enveloping attack, which, however, was not allowed to fully develop, as the probable result of the day could be foreseen at the commencement of the manoeuvre. The construction of a bridge over the river Maros, undertaken on the 6th September, succeeded perfectly, and was carried out with great rapidity and precision. Immediately on the conclusion of the manoeuvres, the Grand Duke Francis Ferdinand expressed himself as highly satisfied with all he had seen and with the bearing and endurance of the men. The dislocation of the troops, and their return to their stations, commenced on the 7th September. The following were, in all, transported by rail, viz. :—

1,862 officers.
43,456 N.C.O.'s and men.
4,327 horses.
278 wagons.
2,113 tons of goods.

The whole of the transport of the troops who took part in the manoeuvres was carried out by 68 military trains, consisting in all of 2,664 wagons, and in the short space of 30 hours.

As before mentioned, there is nothing special to notice with regard to these last manoeuvres, with the exception of the long marches carried out by the troops. In consequence of the extraordinary heat every day, these marches were extremely painful, especially on the main roads covered with thick dust, and on the steep mountain and forest tracks.

The Infantry, however, in spite of all unfavourable circumstances, showed themselves particularly patient and well drilled. In action the troops were well led, and showed they had been well taught.

The Cavalry was, on this occasion, very mobile. It was able, thanks to its activity, to obtain several small successes, such as the capture of a convoy with the daily pay of the hostile troops, and to threaten a pioneer detachment when constructing a bridge, etc.

The Artillery had to manoeuvre over broken and in every way unfavourable ground. Its duty was thus a difficult one; nevertheless, the batteries always arrived on their respective positions in time.

The Pioneers had occasion several times to make use of their pontoons for the construction of flying bridges, and were of great assistance to the other branches of the Service.

The Balloon Detachments could render but little service in the heavily wooded country.—*Précis from Revue Militaire Suisse.*

JAPAN.—*The Military Forces of Japan.*—The *Rouskii Invalid* gives the following details of Japan's military strength :—

The military forces of Japan are composed of : 1st, the Permanent Army with its Reserves and its Recruiting Reserves; 2nd, the Territorial Army; 3rd, the National Militia; 4th, the Militia of the Islands of

Hokkando, Tsousima, Goto, Liou-Kiou, and others. The Permanent Army conducts operations both at home and abroad; the Territorial Army is for the defence of the Empire itself; the Militia are used for auxiliary operations in the more distant parts of the country.

Recruiting.—Military service is personal and obligatory, and the male Japanese population is liable to it from the age of 17 to 40 years; at the same time the semi-savage population of the Islands of the Archipelago are not liable to any military obligations. The total period of service is for 12 years and 4 months, of which 3 years are passed in the Regular, 4 years and 4 months in the Reserve, and 5 years in the Territorial Army. At the same time, about 13,500 men are drafted into the Reserve after 2 years' service in the Regular Army. The recruiting reserve is formed from young men of the class who remain in excess after the calling out of the recruits necessary to complete the regular units; they remain for 7 years and 4 months in this Reserve, and then pass directly into the Militia. On mobilisation, the recruiting Reserve, in the same manner as the Regular Reserve, serves to complete the units of the Permanent Army. The following only are entirely absolved from service, viz.:—Youths who are absolutely unfit; others only receive dispensations from service in peacetime, or when in excess. The recruiting is by districts, and for this purpose Japan is divided into 12 divisional districts, each of which is again split up into 4 regimental sub-districts. Each regimental sub-district forms, on a war footing, 1 infantry regiment, 1 dépôt battalion, and 1 Territorial Army regiment. The cavalry, artillery, and other branches of the Service are recruited from the whole of the divisional districts. The Guards are recruited from the whole of the Empire. The non-commissioned officers come from the ranks.

The officers are recruited from the sub-ensigns. The latter come from the Military School, where the course lasts for a year, and where they enter after having served for six months in the ranks, and after completing the course at the Central Preparatory Military School. In order to be promoted from sub-ensign to sub-lieutenant, the consent of all the officers of the regiment in which the candidate is serving must be obtained. On account of present deficit in the cadres, 400 non-commissioned officers are annually promoted to commissioned rank. The limit of age fixed for the different ranks is as follows: lieut.-generals, 70 years; major-generals, 65 years; colonels and lieut.-colonels, 54 years; majors, 51 years; captains, 48 years; lieutenant and sub-lieutenant, 45 years.

Military instruction is carried out in accordance with the German regulations which have appeared from 1880 to 1890. In the infantry, individuals as well as units are remarkable for their good appearance under arms, for the regularity of their movements and for the extraordinary mobility of their formations. Although the men are small and not thoroughly developed, they are distinguished for their smartness, lightness, and endurance under privations. In the cavalry, the horses are weak and badly trained; the men do not ride well; the paces are not properly developed; the harness and equipment are, however, satisfactory. On the field of battle the cavalry show but little initiative; they hardly ever guard the flanks, but remain almost always in the rear; hitherto, as a rule, it has shown but inferior quality. In the artillery the personnel is well trained, and the matériel very well kept; the horses, however, leave much to be desired, which greatly detracts from the mobility of that arm. The remount work is carried out by means of purchases and by requisition, in time of war. With this object, they are divided into thirteen districts, but

as a rule the number of horses on the lists is inadequate for the needs of the Army.

Military Organisation.—The Emperor is supreme head of the armed forces of Japan. The most important questions regarding the Army are dealt with by the Superior War Council. The immediate assistants of the Emperor are three dignitaries, who are quite independent of one another viz.: the War Minister, the Chief of the General Staff, and the Director-General of Military Training. In order to ensure unity of action amongst these three, as well as between the War Department and the Admiralty, a Council was formed in 1900, consisting of the War Minister, the Minister for the Navy, the Chiefs of the General Staff and of the Naval Staff, and the Director-General of Military Training. The General Staff consists of six officers, and is under the immediate orders of the assistant to the Chief of the General Staff. Three of the heads of the offices are, at the same time, chiefs of the staffs of the three defence zones into which the whole of the Empire is divided. Each of these zones consists of four divisional districts; the commanders of these zones supervise the preparation of the troops for war, and the defence organisation of their districts.

The corps of officers of the Staff is recruited from officers who have been through the War Academy, and who have then put in a year with their regiments. The Staff Corps consists of about 150 officers. The Army Service Corps establishments include clothing stores, tailors' shops, and a cloth manufactory at Senjon. The artillery establishments consist of two arsenals, viz.: 1st, the arsenal at Tokio with an arms factory, which turns out 300 rifles a day; an instrument factory; a wheel factory; a saddle manufactory; and a cartridge factory, which can turn out 10,000 cartridges a day; 2nd, the arsenal at Osaka, which includes a gun-carriage factory; a gun foundry; a fuse factory; a steel works; a loading establishment; and a harness and equipment store. There are also two national powder factories at Itabashi and at Evahane.

The military instructional establishments consist of:—1st. Six preparatory military schools, taking 150 pupils each, and where the courses are for three years. 2nd. A Central Preparatory Military School, where the course lasts for two years, and the number of pupils amounts to 300; pupils go to this school on leaving the preparatory schools, and leave it as non-commissioned officers, and are posted to regiments. 3rd. The Military School at Tokio, open to non-commissioned officers who have passed through the central school, when they have served six months with their regiments, and to those who have enlisted conditionally, and who have one year's service. The number of students is from 500 to 700, and the course there lasts for a year. On leaving it, students return to their regiments as sub-ensigns. 4th. The Artillery and Engineers' School of Application, where the course lasts for two years. 5th. The War Academy for the preparation of officers for the Staff; the course lasts for three years, and, on leaving it, the officers must pass a year with their regiments before being posted to the Staff. 6th. The Cavalry School of Application, where the course is for ten months. 7th. The School of Musketry, with a course of one year and eight months. 8th. The artillery gunnery course of three months. 9th. The Technical Powder School, where the course lasts three years. 10th. The Fortress Artillery School. 11th. The School for Military Topography. 12th. The Army Service Corps School. 13th. The Medical and Veterinary Schools. 14th. The School for Tailors and Boot-makers. There are seven remount dépôts, three of 2,000, two of 1,000, and one of 600 horses. The chief dépôt has, in addition, a school for farriers.

The following are the details of the effective of the Japanese Army on a war footing, not counting the troops on the Island of Formosa:—

Administration and Establishments.—1,000 officers, 2,900 men, and 2,770 horses.

PERMANENT ARMY.

Infantry.—52 regiments of 3 battalions=156 battalions, or 4,160 officers, 143,000 men, 520 horses.

Cavalry.—17 regiments of 3 squadrons=55 squadrons, or 400 officers, 9,300 men, 9,000 horses.

Field Artillery.—19 regiments of 6 batteries=684 guns, 800 officers, 12,500 men, 8,800 horses.

Fortress Artillery.—6 regiments and 3 battalions=20 battalions, or 530 officers, 10,300 men, 70 horses.

Engineers.—13 sapper battalions, or 270 officers, 7,000 men, 215 horses; 1 railway battalion of 20 officers, 550 men, 15 horses.

Transport.—13 battalions, or 220 officers, 7,740 men, 40,000 horses.

Total=203 battalions, 55 squadrons, 684 guns, or 7,500 officers, 193,790 men, 61,390 horses.

DEPÔT TROOPS.

Infantry.—52 battalions, or 24,950 men.

Cavalry.—17 squadrons, or 2,350 men.

Artillery.—19 batteries=114 guns and 2,650 men.

Engineers.—13 companies, or 1,600 men.

Transport.—13 companies, or 3,050 men.

Total=52 battalions, 17 squadrons, 26 companies, 19 batteries, or 1,000 officers, 34,600 men, 9,000 horses, 114 guns.

TERRITORIAL ARMY.

Infantry.—52 regiments of 2 battalions=104 battalions, or 2,600 officers, 96,300 men, 200 horses.

Cavalry.—26 squadrons, or 130 officers, 4,520 men, 4,650 horses.

Artillery.—13 regiments of 4 batteries=312 guns, 210 officers, 5,510 men, 3,010 horses.

Engineers.—13 battalions of 2 companies=130 officers, 4,700 men, 80 horses.

Transport.—13 battalions of 2 companies=130 officers, 7,500 men, 3,920 horses.

Total=130 battalions, 26 squadrons, 312 guns, 3,200 officers, 118,530 men, 11,860 horses.

Militia.—1 battalion, 1 squadron, 6 guns, or 35 officers, 1,180 men, 210 horses.

Grand total=386 battalions, 26 companies, 99 squadrons, 1,116 guns, 11,735 officers, 348,100 men, and 86,460 horses.

ARMAMENT.

The infantry and engineers are armed with the Midji magazine rifle, model 1897. The dépôt troops and Territorial Army have a considerable reserve of Murata magazine, and of Peabody and Remington rifles. The chief details, regarding these arms, are as follows:—For the Midji, 6·5-mm. calibre, magazine with 5 cartridges, weight with bayonet 4·3 kilogrammes (about 9 lbs.), initial velocity 725 metres; has a dagger bayonet; for the Murata, 7·5-mm. calibre, magazine with 8 cartridges, weight with bayonet 4·5 kilogrammes, initial velocity 610 metres; has a sword bayonet. The bayonet is only fixed at the moment of attack, or by sentries when posted. Some divisions have machine guns on trial.

The cavalry is armed with swords with metal scabbards, and with Midji carbines, model 1897. The field and mountain artillery have Arisaka 75-mm. Q.F. guns, model 1898, with hydraulic compressor. Smokeless powder is manufactured in Japan. Batteries have two ammunition wagons in peace and six in war-time. The gunners are armed with sword bayonets. The batteries at Formosa have Uchatin bronze guns, with a 75-mm. calibre. The fortress and siege park artillery have the most recent models of guns and mortars, as well as a considerable number of old bronze guns.—*Précis from La France Militaire.*

A Russian Opinion of the Japanese Army.—The following opinion of a distinguished Russian military officer, which has recently appeared in the *Nové Vremia*, may be of interest at the present time:—

"It goes without saying that the Japanese Army is a serious adversary for us, especially on account of the vast distance which separates the heart of Russia from the future theatre of operations, but in spite of that the troops of the Rising Sun labour under many defects. We place in the first rank the weak effective and bad quality of the cavalry. It does not consist in war-time of more than 99 squadrons, that is to say from 12,000 to 13,000 horsemen, which constitutes a thirtieth portion of the whole of the Japanese armed forces. It must be generally admitted that this proportion is an excessively small one compared with European Powers, where the proportion of cavalry to the other arms varies from one-seventh, in Russia, to one-twelfth and one-fifteenth. The principal obstacle to an increase of cavalry appears to lie in the small number of horses actually in the country. Further, according to competent authorities who have visited Japan, these horses are small and unsuitable for cavalry work. The paucity of mounted men, the unfavourable conditions of the country from a topographical point of view, and the density of the population, do not permit of such necessary training to be given to the cavalry in peace-time as to prepare it for large sweeping strategic operations."

"Although the Government is seriously endeavouring to improve the breed of horses, and buys from breeders in other countries, it still requires much time in order to develop, in sufficient quantities, the breeds of saddle and draught horses. The Japanese Army would find serious difficulty in bringing units and their equipages up to a war footing in the event of a mobilisation. It would have to bring horses from a distance, buying them in Australia, and losing much time before the necessary mobilisation requirements could be properly carried out. The consequences of this situation are at once apparent. This is not the place to lay stress on the pernicious influence that insufficiency of cavalry in both quality and quantity would exercise on the conduct of operations. We will merely remark that every army, under such conditions, marches at haphazard and in darkness. Such an army, even if it obtained a success, could not take advantage of it, in consequence of its inability to pursue, and could thus never gain a decisive victory. On the other hand, if unsuccessful, it would incur great danger from the cavalry of its conqueror."

"The infantry appears superior to the other arms; its *moral* is excellent, but, on the other hand, its physical qualifications are small. In hot countries the Japanese infantryman has proved himself capable of enduring great fatigue, but it is not likely that he would show the same quality in cold climates. Not long ago a company, making an ordinary march in Japan, was surprised by a snow-storm, and almost entirely annihilated by the cold. As regards its tactical instruction, the infantry is good, but there is reason to believe, based on recent military operations

in China, that it is but little trained in taking proper advantage of ground. The press has given but little information regarding the artillery, but, at the same time, it is known that the *matériel* is not bad. In a general way it is difficult to estimate, as a whole, the fighting value of an army which has not yet seriously received its baptism of fire. It is, however, beyond dispute that, during the last 35 years, the Japanese have been able to create a very valuable military machine. They had natural advantages at their disposal, and the seed has fallen on good ground, viz.: a naturally warlike nation, as her history proves Japan to be. That history shows a series of interneceine wars, which have given a military temper to the people. It remains to be seen how that Army will bear itself on the day when a great war will put it to a decisive proof, when it has to bring into line all its available forces, and not merely a portion of them."

Decrease in the 1904 Budget.—The scheme for the present War Budget shows a decrease of 1,800,000 yen on that of the previous year. This saving is obtained in the following manner:—

- a. The formation, in 1904, of the 7th Division (Hokkaido) has been entirely abandoned, and the period of service of the Colonial troops, quartered in that place, has been reduced.
- b. The cost of the medical service (administration and hospitals) has been reduced.
- c. Several schools have been amalgamated, thus lessening the general expenditure; the Military School for Music has been incorporated with the Infantry School of Musketry; the Cadet Corps of the province of Tokio has been joined to the Central Corps of Cadets of the town of that name.
- d. Decrease in office charges and in the cost of changes of station.
- e. The expenditure for Formosa has also been reduced, thanks to the decrease in the gendarmerie, in the expense for the transport of *matériel*, etc.—*La France Militaire*.

UNITED STATES.—Inspector-General's Report.—The annual report of the Inspector-General of the Army, Brig.-Gen. G. H. Burton, shows on the whole a satisfactory condition of things in the Army, and one difficult to reconcile with the statements concerning the increase of desertions. These appear to have been heavy at a number of posts, although some organisations have reported very few or none. The Army has lost an aggregate of six full regiments by desertion, and there is an increase of 37 per cent. in the percentage, or from 4·3 to 5·9 per cent. Sixteen organisations stationed at Fort Meade, S. Dak.; Fort D. A. Russell, Wyo.; Fort Grant, Ariz.; Fort Flagler, Wash.; and Fort Stevens, Ore., had an average of almost 19 desertions per organisation. Whenever the inspection reports showed desertions in abnormally large numbers, attention was drawn thereto with a view to special investigation. Complete desertion statistics for the year are not yet available. For the two preceding fiscal years the figures for the Regular Army are:—

Fiscal year.	Average enlisted Strength.	Desertions.	
		Number.	Per cent.
1901	71,006	3,110
1902	79,086	4,667

It is proposed that each case of desertion be investigated by a board, as it is believed that valuable information could be obtained from the associates of the men who deserted. The principal causes for desertion in the Department of Texas are the lack of amusements and recreation at isolated frontier posts, the close proximity of the posts to a foreign country affording a near and safe retreat for deserters, and the abolition of the canteen. The best preventive of desertion would be to remove the two years' limitation as to trial, and provide a penalty of confinement at hard labour for not less than three and not more than five years in a military prison, similar to the one formerly at Fort Leavenworth. The guard houses at a large number of posts are inadequate; the system of post prisons is unsatisfactory and demoralising, and increases guard duty. The establishment of a military prison in the middle West is recommended.

Guard duty has been severe, 50 per cent. of 127 posts giving privates less than the six nights in, provided for by Par. 32, Manual of Guard Duty; 28 per cent. of them less than five nights, and 11 per cent. less than four nights. The details are given in the table following:—

Location.	Posts considered.	Average days apart.	Posts having tours					
			Less than 6 days apart.		Less than 5 days apart.		Less than 4 days apart.	
			Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
United States...	51	19	37·2	8	15·7	2	3·9
Philippines	76	45	59·2	28	36·8	12	15·8
Total and average	...	127	64	50·4	36	28·3	14	11·0

The company mess system which prevails at all but about a dozen posts in the United States is satisfactory.

The general messes are unpopular, and should be abolished, using the large mess halls for instruction, gymnasiums, post exchanges, etc. Post exchanges should be put in charge of retired officers of approved business capacity, who should have the full pay of their grades. The exchanges require the active scrutiny of an officer who has no other care on his mind. Of sixty-four posts in the United States, Alaska, Porto Rico, Cuba and Honolulu, fourteen have no post exchange, and at the other fifty the accommodations are generally unsatisfactory. At a few posts suitable buildings are being constructed. Only eight of the ninety-four posts in the Philippines have exchanges. It is believed that a well-regulated post exchange and a thoroughly equipped gymnasium would accomplish more towards contentment and discipline in the Army than almost anything the Government can, under the law, accomplish.

The supplies furnished by the various departments are reported satisfactory on the whole. There is complaint of the quality of the hats, but an improved hat is to be furnished with a strap or cord. The multi-coloured service uniforms are generally objectionable, and a few posts report poor shoes and rubber-boots and misfit muslin and chambray shirts. A sufficient supply of woollen clothing should be kept on transports to provide for troops crossing the Pacific during periods of unusual frosts. There is more or less irregularity in supply of fresh meat and vegetables in the Philippines. Cold storage is needed. Supplies for Alaska should

leave Seattle on the first boat of the season's navigation—last of May or first of June. The forced issue of emergency rations in garrison should be discontinued. The present scout ration is inadequate. The scouts should have the regular ration with some modification in the fruit and vegetable components. They need a smaller shoe.

The instruction of the Army has made rapid strides during the year. Improvement is shown in the curriculums of the special schools, in the technical instruction for coast artillery, in small arms firing regulations, in target ranges, and in the stimulus given to rifle competitions. Instruction under A.R. 257 has been invariably carried out, so far as the conditions and facilities have permitted. But there are reports showing no small arms target practice for want of a range; no artillery practice for want of guns, or because the harbours are landlocked; no gallery practice for want of a gallery; limited drills for want of suitable drill grounds, or drill halls in winter; physical training imperfect for want of a gymnasium. These disabilities have been in a measure overcome by energetic post commanders, who have shown what business energy and hearty co-operation can accomplish with little, if any, expense to the Government, such as the construction of target ranges, improvising of means for artillery practice, amusements for the enlisted men, etc.

Considerable concentration of troops has been effected during the year in the Philippines with very beneficial results; but many of the stations there are yet garrisoned by a single company or troop or detachment, thus precluding battalion or squadron, or higher formations, for drill or other military exercises.

For twenty posts in the Department of the Colorado, the Missouri, Dakota and Texas, at which seventy troops of cavalry were serving, the reports indicate a very good state of instruction, except at four posts, where, owing principally to new horses which were fractious in ranks, the drills were only fair. At Fort Clark, Tex., and Fort Wingate, N. Mex., marked improvement is observed since the preceding annual inspection. An advanced state of instruction has been reached at Fort Leavenworth, Kas., and the two squadrons at Fort Meade, S. Dak. At a few posts mounted exercises were not practicable, either for lack of mounts, as at Fort Walla Walla, or for lack of trained horses, as at Jefferson Barracks and in one squadron at Fort Riley.

The field artillery drills were satisfactory, and material in good condition. It does not appear from the inspection reports that there has been any instruction during the year in swimming horses by the cavalry and field artillery commands.

Drills of the coast artillery revealed, as a general rule, satisfactory progress. At some posts a commendable degree of efficiency was reported; but in several commands a large number of men were deficient in knowledge of nomenclature of guns and carriages, showing a necessity for more careful instruction of this nature. The infantry drills of a large number of coast artillery companies were only fair.

The drills and exercises of the infantry commands showed, in general, a degree of efficiency commensurate with the character and amount of instruction given, which, as a rule, has been as complete as the conditions and facilities seemed to warrant. The need of thorough, systematic, and progressive instruction, especially in battalion and regimental drills, minor tactics, etc., for all troops after returning from the Philippine Islands is well understood. The companies, battalions and regiments that had been at the home stations for some time were generally in excellent condition,

and in several instances won commendations from the inspectors for the proficiency which they displayed.

The company and battalion drills of the 1st Battalion of Engineers at Fort Leavenworth, Kans., were excellent. This battalion was reported in excellent condition throughout. The Signal Corps is in an excellent state of efficiency.

The guards are regularly detailed and mounted, and, with few exceptions, were found to be well instructed. The countersign did not seem to be very generally used. Under existing regulations the commanding officer determines whether it shall be used or not.

More books, and these modern books, are needed for the post libraries, and they should be provided for by an appropriation, there being no more post-exchange profits to draw upon. The organisations in the Philippines have, as a rule, company libraries, but no post libraries. A good book to read would certainly help to shorten the day, bring contentment, and remove some of the distressing conditions that make service over there so trying and have led, in some instances, to suicide.

The remounts received by the cavalry and field artillery during the year were, with few exceptions, reported to be good and suitable. The inspector-general who made the annual inspection at Fort Riley stated that the horses, just received by the 3rd Squadron, 8th Cavalry, were the best he had ever seen purchased for the cavalry service. The discontinuance of the system of furnishing horses to troops without regard to uniformity of colour, will result in improving the military appearance of each troop.

Good progress has been made during the year in providing better quarters, and the sanitary conditions of public buildings are generally good. Permanent barracks are needed at Honolulu. The use of electricity for lighting posts should be extended. It is suggested that officers' quarters be provided with heavy furniture, such as ice chests, side-boards, tables, bureaus, bedsteads, etc.

The means of transport are adequate and in good condition. The vessels of our transport service have attained an excellent state of efficiency and are evidently well managed at present. Quartermasters' depôts are generally in good condition and well managed. Their important needs seem to be few, aside from additional storage buildings at Jeffersonville, St. Louis Clothing Depôt and Schuylkill Arsenal. The need of depôts at San Juan, P.R., and Iloilo, P.I., is questioned. Subsistence depôts and purchasing stations are in a very satisfactory condition. The contract dental surgeons are doing good work, and their charges for gold fillings are moderate. The military appearance, dress, and equipment of the Hospital Corps detachments are good, and, with few exceptions, they were well instructed in their duties. The reputation of the Medical Department for furnishing supplies of good quality has been fully sustained, the unfavourable criticisms in this respect being confined to poor quality of quinine at one post and inert vaccine virus at another. Of eighty posts inspected outside the Philippine Islands, only forty-eight were reported to have hospitals that were entirely satisfactory and in good condition. Those in the Philippines are not entirely satisfactory.

The complaints of ordnance and ordnance stores have been remarkably few, and these have been promptly investigated and a remedy applied. The reports indicate excellent military and business administration and methods at the arsenals, ordnance depôts, and powder depôts inspected during the year. The ordnance detachments are well instructed and are

kept under proper military discipline. The messing is good, and medical attendance satisfactory.

The Philippine Scouts show a progress very creditable to their officers, and proving the aptitude of the Filipino for military service. Apart from the question of loyalty to the United States—and the officers have implicit confidence in their men in this respect—the uncertainty as to the future status of these organisations seems to be the only obstacle in the way of their ultimate success. Each company should have three officers, regimental organisation should be authorised, and the door of promotion opened to officers and deserving enlisted men. Modern arms should be issued to the native troops, especially the Macabebes and Ilocanos, and each organisation should be furnished with a dozen bolos.

The recruiting officers are giving close attention to their duties. In all 83,362 persons applied for enlistment; 15,334, or 18·39 per cent., were accepted, and 68,028, or 81·61 per cent. rejected. Compared with last year's figures of about 28 per cent. accepted and 71 per cent. rejected, the figures for this year show a marked change in percentages, the ratio of rejected to accepted increasing from 2·5 to 1 to 4·4 to 1. Of the accepted applicants, 13,472, or 87·85 per cent. were of native, and 1,862, or 12·15 per cent., of foreign birth. The corresponding percentages for last year were about 86 and 13, respectively, showing an increased proportion of enlistments for the native element, the ratio of native to foreign born being 7·2 to 1 for this as against 6·6 to 1 for last year.

The amount of public property condemned has been unusually large. The withdrawal of troops from Cuba and Porto Rico has led to a marked decrease in blindness in public animals.

There is a healthy growth in the military feature at institutions having military professors. Nearly all offer prizes for proficiency in military work, and 49 out of 74 make it necessary to a diploma. The graduation from the military department was 1,647. The cadets should be furnished with the modern rifle in place of the '45 Springfield. There were 120 practice marches, with 2,646 cadets participating, and thirteen colleges had encampments of from four to twelve days. Target ranges are provided at thirty-five colleges.

A minute inspection of the Soldiers' Home showed everything to be in excellent condition there.—*U.S. Army and Navy Journal.*

NAVAL AND MILITARY CALENDAR.

OCTOBER, 1903.

2nd (F.) 1st Bn. King's Own (Royal Lancaster) Regt. arrived in India from Malta in the "Soudan."

3rd (Sat.) H.M.S. "Diadem" left Sheerness with relief crews for Australia.
" " 2nd Bn. North Staffordshire Regt. left England for India in the "Sicilia."

4th (S.) Launch of first-class battle-ship "Erzherzog Karl" at Trieste for Austro-Hungarian Navy.

5th (M.) H.M.S. "Psyche" left Plymouth for Australia.

6th (T.) H.M.S. "Cæsar" paid off at Portsmouth.

7th (W.) H.M.S. "Ramillies" paid off at Portsmouth.
" " Launch of first-class armoured cruiser "Carnarvon" from the Beardmore Yard, Govan-on-Clyde.

7th (W.) British Troops destroyed the village of Nadian, near Nobatdakin, Somaliland.
 8th (Th.) H.M.S. "Duncan" commissioned at Chatham for Mediterranean.
 " " H.M.S. "Goliath" paid off at Chatham.
 " " Launch of first-class armoured cruiser "Antrim" at Clydebank.
 14th (W.) Arbitration Treaty between France and Great Britain was signed.
 " " 1st Bn. The Buffs (East Kent Regt.) left India for Aden in the "Soudan."
 15th (Th.) 1st Bn. Oxfordshire Light Infantry arrived in India from England in the "Plassy."
 17th (Sat.) 2nd Bn. Royal Inniskilling Fusiliers left South Africa for Egypt in the "Dunera."
 20th (T.) H.M.S. "Barrosa" commissioned at Devonport for the Cape.
 21st (W.) Lord Methuen, on behalf of H.M. the King, presented the Emperor of Austria with the insignia of a British Field-Marshal.
 22nd (Th.) H.M.S. "Highflyer" arrived at Plymouth from East Indies.
 23rd (F.) 1st (King's) Dragoon Guards left South Africa for England in the "Tintagel Castle."
 24th (Sat.) H.M.S. "Duncan" left for Mediterranean.
 " " 1st Bn. The Buffs (East Kent Regt.) arrived at Aden from India in the "Soudan."
 " " 2nd Bn. Royal Dublin Fusiliers left Aden for Ireland in the "Soudan."
 " " 2nd Bn. Oxfordshire Light Infantry left India for England in the "Plassy."
 26th (M.) 2nd Bn. North Staffordshire Regt. arrived in India from England in the "Sicilia."
 27th (T.) An attempt was made on the life of Prince Galitzin, the Russian Governor-General of the Caucasus, at Tiflis.
 28th (W.) H.M.S. "Tartar" commissioned at Chatham for South Atlantic Station.
 " " Russian troops re-occupied Mukden in Manchuria.
 29th (Th.) 8th Hussars left South Africa for England in the "Avondale Castle."
 31st (Sat.) Launch of first-class battle-ship "Preussen" from the Vulcan Works, Stettin, for Imperial German Navy.
 " " H.M.S. "Barrosa" left Plymouth for the Cape.

Addendum to September Calendar.

15th (T.) Launch of first-class armoured cruiser "Maryland" at Newport News, U.S.A., for U.S. Navy.

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NOTICES OF BOOKS.

A History of the Peninsular War. By CHARLES OMAN, M.A., Fellow of All Souls College and Deputy Professor of Modern History (Chichele) in the University of Oxford, Corresponding Member of the Real Academia De La Historia of Madrid. Vol II., January-September, 1809. From the Battle of Corunna to the end of the Talavera Campaign. With maps, plans, and illustrations. Oxford: At the Clarendon Press. 1903. Price, 14s. net.

So long as men are capable of admiring the English language, when employed by a great master of it for the purposes of heroic description, so long will Napier probably remain without any serious rival upon this particular field of literature. But, actually as a historian, Mr. Oman has surpassed the author of the classic work which hitherto has chiefly guided us in our studies of the Peninsular War. Indeed, it is not too much to say that in comparison with Oman's History, Napier's is little more than an outline sketch; and, in spite of all its splendid qualities, its soul-stirring descriptions which no one can read without emotion, actually a less useful work. Moreover, it is especially remarkable that whereas Napier, the soldier, is often prolix when dealing with political matters, and devotes many pages to the political follies of Mr. Frere and other mischievous persons, Mr. Oman, the civilian, is content to dispose of such things, briefly though sufficiently, and to devote himself particularly to following with not inferior lucidity and in more minute detail, the strictly military issues and incidents of those eventful days. That Mr. Oman has had at his disposal a wider field of information than that which was open to Sir William Napier, is perfectly true; but the signal success with which he has employed his opportunities is not therefore a less notable achievement. The result, so far, is to be found in two large volumes, themselves containing almost as much matter as Napier's entire history—every page full of interest, and yet the subject brought down only so far as September, 1809!

The present volume opens with a review of the general situation in the Peninsula, as affected by Moore's diversion, which as Mr. Oman justly observes, had by its single influence "paralysed the main scheme of the Emperor for the conquest of Spain." The withdrawal from various districts

of the troops required to deal with Moore, had provided a respite for the Spaniards during which their forces were organised to some extent, and at all events collected and partially armed. That little but disaster attended the efforts of the ill-trained Spanish troops and their generally incompetent leaders was only what might be expected; but just as Moore's diversion had by drawing away the French Armies given the Spaniards time to become at least numerically formidable; so did the latter in their turn now keep the French engaged and thus enable Wellesley to re-organise the Portuguese forces and establish himself without interruption. The second siege ending in the fall of Saragossa was the most tragic; and the loss of the battle of Medellin, the most important event of the period immediately preceding the arrival of Sir Arthur Wellesley and the dawn of a more hopeful prospect for Spain. The fall of Oporto, and its brief occupation by Soult, resulted in providing Wellesley with a great opportunity, of which he was soon to take advantage; and towards this Sir Robert Wilson had brilliantly contributed by effectually preventing Lapisse from operating in combination with Soult—though unaided by Sir John Cradock, through whose incapacity good British troops were kept idle with, so to speak, one foot always on board ship. The situation was saved, as Mr. Oman says, by "Wilson's happy audacity and resourceful generalship. But for him, the timidity of Cradock, the impotence of the Spaniards, and the disorganisation of the Portuguese Army, might have brought about the fall of Cuidad Rodrigo and Almeida, at the same moment that Soult was entering Portugal on its northern frontier."

It was unfortunate that Sir Robert Wilson was one of those who fail to distinguish between the proper exercise of individual initiative and what is mere intolerance of superior authority. There must be a supreme head to whom all must defer, if anything really great is to be accomplished; and whilst "individuality" in a subordinate is excellent, where exerted for the furthering of the general scheme, it usually becomes detrimental when exercised at variance with or independently of it. Sir Robert Wilson, had his nature been different, might have been the right-hand man of Wellington, and his fame second only to that of his great chief. But it was not to be, and he went home—his great merits practically unrecognised. Mr. Oman has done well in now paying homage to one who, though he earned much honour, has received but little praise upon account of it.

On 22nd April, 1809, Sir Arthur Wellesley, after a remarkably rapid voyage of only eight days, landed at Lisbon and was rejoiced to find that matters were not in so bad a position as the latest information prior to his departure from England had led him to fear. Cradock's troops were still present, Victor had not been reinforced by Sebastiani, nor was Badajoz besieged. Wellesley was thus free to follow his original intention to operate against Soult, pending arrangements with Cuesta for a combined effort against Victor. At this point, Mr. Oman appropriately introduces an essay upon the characteristics, talents, and achievements of Wellington—a striking word-picture that will generally be accepted as true to life. From this it is here impossible to quote at length, and an extract from the final summary must suffice. "In spite of all his faults, he stands out a majestic figure in the history of his time. It is the misfortune of the historian that when he sees so much to admire and to respect, he finds so little that commands either sympathy or affection."

There is but little delay, merely a brief though very clear review of the situation and the means at Wellesley's disposal, before we find ourselves following the movement on Oporto, which culminated in the brilliant passage of the Douro, the re-capture of the city, and the pursuit of Soult

who by his resourcefulness indeed saved the lives and liberty of himself and the bulk of his men, but lost the honour, the arms, and the munitions of his Army. The retreat of Soult is in sharp contrast with that of Moore, whose glorious death has no shade of discredit attached to it, and who, after a harrowing retreat, was yet able to stand and fight, victoriously, for the right to embark his Army. Soult, upon the contrary, attained safety at the head of no more than an unarmed mob. That Soult escaped at all was due to the fact that his pursuers, unless they like himself had thrown away all that made them an organised force, could not follow so quickly as he could run away. As the result of Wellesley's first success in this campaign, Galicia was relieved through the strenuous exertions of the inhabitants of that Province, aided by the lack of co-operation between Soult and Ney which contributed not a little towards the actual consummation. In Aragon, the French were more successful, as Suchet inflicted a disastrous defeat upon Blake. But matters were speedily ripening for Wellesley's march to Talavera in conjunction with Cuesta. The difficulties experienced by Wellesley in dealing with this quite impossible old man were heart-breaking, but the final result is familiar history—a desperate battle, replete with dramatic incidents, and most gloriously won. Starvation compelled the subsequent retreat of the British Army, but apart from the moral effect created by his tactical success, Wellesley had learned, at almost moderate cost, that the Spanish Juntas and Armies alike were factors upon which it was unsafe to base strategical operations. The failings of the Spaniards were not, however, as Napier would have us believe, invariably due to sheer "cussedness." Mr. Oman deals judicially with all men, and is never, as Napier so often allowed himself to be, swayed by prejudice.

Space has already been exceeded, but with such a work before him the reviewer has a hard task to keep within limits. For its merits to be properly appreciated, the book itself must be read; and it remains but to add that he who fails on reading it to recognise its surpassing value, must be one who is incapable of gaining profit from the study of military history.

Historical Record of the 3rd (King's Own) Hussars. By Major-General R. BLUNDELL. London : W. P. Griffith & Sons, Ltd., Prujean Square, Old Bailey, E.C. 1903.

The study of regimental history has never been a popular recreation in the British Army. It is, indeed, rare to find a young officer who can give anything like an accurate version of even the leading events in the history of the regiment in which it is his destiny to spend many years of his life. In regiments which possess published records, such indifference is unpardonable: it is bad enough when the information is not so ready at hand. For many years, few cavalry regiments could boast of anything beyond the official ventures made by Mr. Cannon, of the Adjutant-General's office, in the thirties and forties; but this defect has been remedied in recent years, in the cases of several cavalry regiments, notably the Royal Dragoons, 10th Hussars, 14th Hussars, 17th Lancers, and 19th Hussars.

The 3rd Hussars owes its origin to certain independent troops raised in Berks, Middlesex, Herts, and Essex, and was formed into a regiment in 1685, under the title of the "Queen Consort's Own Regiment of Dragoons." The regiment declared for William of Orange after his landing at Torbay, and fought under him in the Irish and Flanders wars. It did good service at the passage of the Boyne and at the battle of Aghrim.

It was at Namur and Cadiz in 1702, witnessing the capture of the galleons in Vigo Bay. It went to Spain again in 1706, and fought at the disastrous battle of Almanza the year after. It was in Lancashire and Scotland during the Highland Rising of 1715, and it fought at Dettingen and Fontenoy, and was at Culloden in the '45. The light troops took part in some of the descents on the French coast in 1758; and the regiment was at Walcheren expedition, and in the Peninsular war. It was at home when the battle of Waterloo was fought, but landed at Ostend a month later, marched to Paris, and served with the Army of Occupation in France until 1818, in which year it was converted into Light Dragoons. In 1837 the regiment proceeded to India, and in 1842 formed part of the avenging Army which entered Afghanistan, forcing the Khyber Pass, capturing Cabul, and effecting the release of the British captives. In 1845, it served in the first Sikh war at Moodkee, Ferozeshah, and Sobraon. In 1848-49, it was engaged in the second Sikh war, at Rammuggur, Sadoolapore, Chillianwallah, and Goojerat; and was in South Africa during the latter part of the recent war. This is a fine record of service, and one which is worthy of an able historian.

In 1847, Mr. Cannon, considering the materials which were accessible to him in the War Office and the short time allowed him, compiled a very fair record of the regiment's doings. In 1857, Captain G. E. F. Kauntze revised that account, and brought it up to date; while Major-General R. Blundell, who commanded the regiment from 1874 to 1880, has now made a praiseworthy effort to bring the history down to the present year. It is by no means an easy matter to write a regimental history in such a manner that, while observing strict accuracy, it shall be at the same time interesting and readable. The most successful effort in that direction is the Hon. J. W. Fortescue's charming history of the 17th Lancers, which is accurate and exhaustive, without being cumbersome.

Major-General Blundell's publication does not aspire to be anything beyond a record of the services of the regiment, compiled from official sources. Histories, written in this manner, have, it is feared, very little prospect of commanding an extensive sale outside the particular regiment concerned; but it is to be hoped that every officer interested in the 3rd Hussars will possess himself of a copy. The book is well printed and bound, and the illustrations are good.

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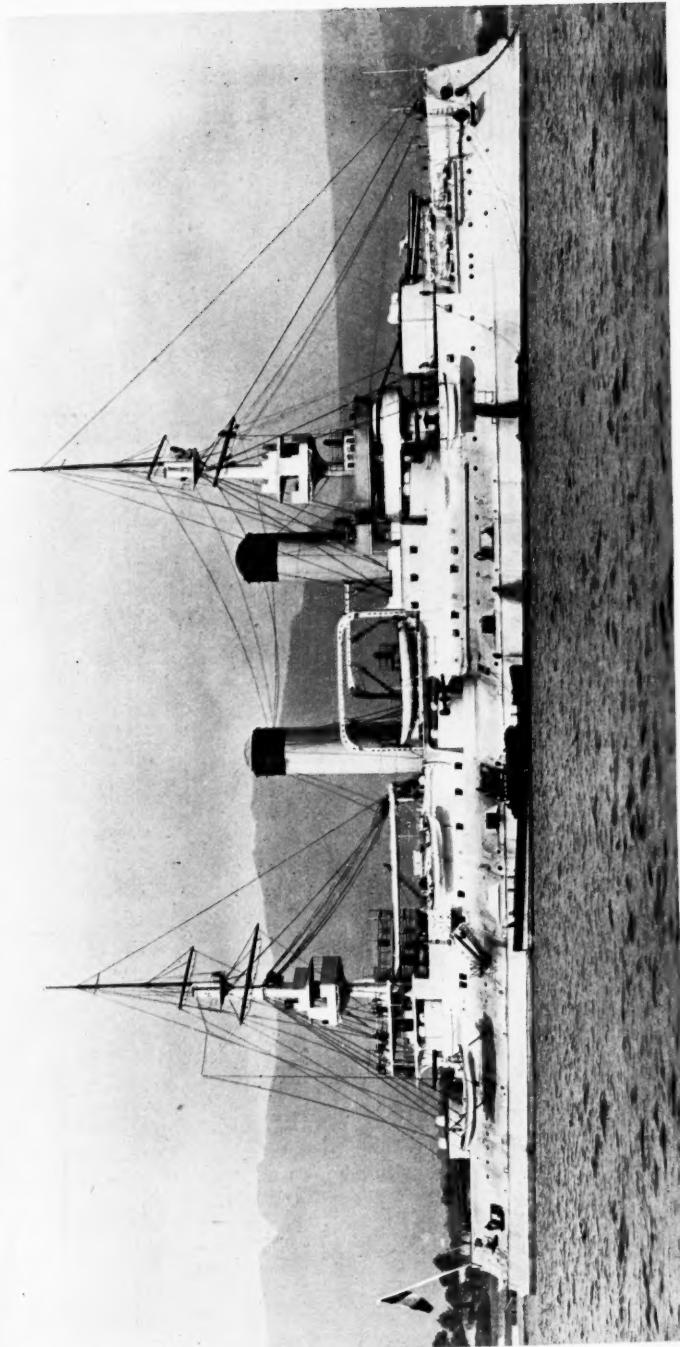
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Théorie de la Grande Guerre. Par General von CLAUSEWITZ. Traduction du Lieut.-Colonel DE VÂTRY. 4 vols. 8vo. Paris, 1899.



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